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# D E N T A L



MARCH, 1942

# FACTS

## FROM UNIVERSAL'S LATEST BOOK

"Co-ordinate Size System and Interchangeability of Laterals"

Used in determining the arrangement of tooth sizes for

### VERI-CHROME FIVE PHASE ANTERIORS

## VARIABILITY OF NATURAL TEETH

In any population group the dentitions vary in size.

The range of variability is not the same for each tooth and in artificial teeth it should follow that of natural teeth.

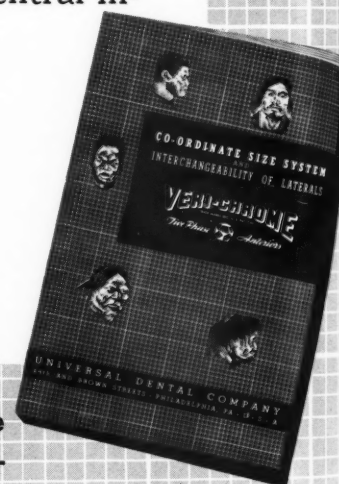
For both esthetic and practical reasons, sets of artificial teeth are selected by the size of the central incisors.

In the construction of a denture the *width* of an anterior tooth is more important than the *length*.

The width (mesio-distal diameter) of the central incisor is used as a point of reference.

*As a result of these studies, Veri-Chrome Five Phase Anteriors are arranged in a scientific order in which the identification of sizes follows a logical sequence simplifying selection and eliminating duplication.*

For more details about this interesting study see our book "Co-ordinate Size System and Interchangeability of Laterals". If you haven't received your copy, write us or ask your dealer. In the meantime—



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*Five Phase*  *Anteriors*

## UNIVERSAL DENTAL COMPANY

*Manufacturers of the Most Complete Line of Porcelain Teeth*

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# THE DENTAL Digest

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NO. 3

## MARCH, 1942

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## About Our CONTRIBUTORS

GEORGE SCHUGAR, B.S. (1930) and D.D.S., 1931 (both earned at the University of Pittsburgh), for the last six years has been giving special attention to the possibilities of dental clinical photography especially as it is related to roentgenography. In October, 1941 Doctor Schugar published with us one result of this interest, and in this issue he presents another: THE PROPER APPROACH TO ROENTGENOGRAPHY, in which accepted principles of photography are applied successfully.

JOHN J. HALL, D.M.D. is a graduate of the North Pacific Dental College, class of 1927. Doctor Hall has a general practice with emphasis on exodontia.

JOHN A. JACKSON in 1926 received his A.B. at the University of Rochester and in 1930 his D.D.S. at the University of Pennsylvania. Doctor Jackson was an instructor at the Rochester Dental Dispensary for two years. He is a general practitioner.

LEON M. GECKER received his D.D.S. at Columbia University College of Dental and Oral Surgery. He is a Captain in the Dental Corps

Reserve. Doctor Gecker has a general practice with attention to orthodontia. He is also clinical chief of staff at the Grand Street Settlement, New York City. In September of last year he described for us A SUPPLEMENTARY X-RAY PROCESSING TECHNIQUE and last January wrote on IMMEDIATE ACRYLIC JACKET CROWNS. The accessory aspirator for root canal therapy described this month is a simple innovation which should prove useful.

ALEXANDER M. RAPOPORT received his D.D.S. in 1929 at the Chicago College of Dental Surgery. He is a general practitioner who makes his first appearance in these pages with a description of his technique of ELECTROMEDICATION IN ROOT CANAL THERAPY.

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# The Proper Approach to Roentgenography

GEORGE SCHUGAR, B.S., D.D.S., Pittsburgh

## DIGEST

The purpose of this presentation is to show through the application of accepted photographic laws that greater control can be exercised in exposing and processing roentgenograms. The experiments reported with the accompanying illustrations demonstrate the following:

1. They define and illustrate exposure and contrast to show their relationship and the effect of the speed of the film and the strength of the developing solution on the range or latitude of exposure.

2. It is shown that the stress on contrast has been unduly emphasized.

3. Changes in temperature are shown to upset the balance of the development.

4. Finally, agitation influences the rate of development.

1. Inasmuch as there is no method of predetermining the exact extent of calcification of bone, the application of photographic principles offers the best approach to roentgenographic procedures because it produces predictable results. The conventional technique of endeavoring to control contrast by varying exposure and by developing all roentgenograms for the same length of time is not dependable and is inaccurate.



Fig. 1A

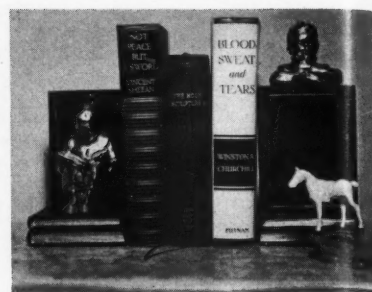


Fig. 2A



Fig. 1B



Fig. 2B

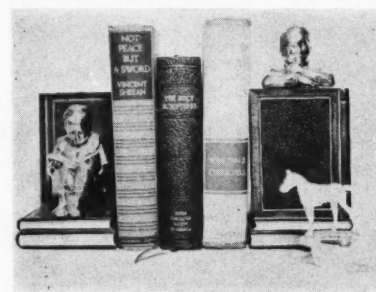


Fig. 1C



Fig. 2C

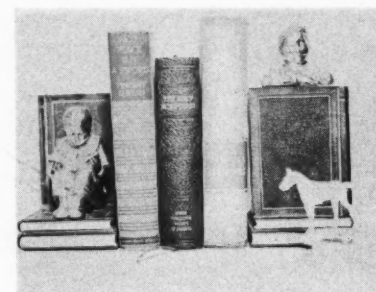


Fig. 1D

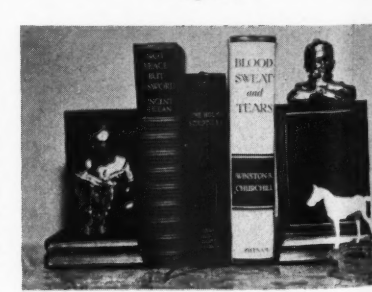


Fig. 2D

### Experiment 1:

Fig. 1, A, B, C, and D—All prints were given identical treatment as was Fig. 1, B.

These prints show that exposure determines the opaqueness of a given area; therefore, bite-

wing roentgenograms for cavities should be included in all examinations.

A: Exposure 1/50 second; 11 minute development. Print was overexposed; shows loss of contrast.

B: Exposure 1/25 second; 11 minute development.

C: Exposure 1/10 second; 11 minute development. Print was underexposed; shows lack of contrast.

D: Exposure 1/5 second; 11 minute development. Print was underexposed; shows lack of contrast.

Conclusion: Exposures to be accurate must be within the latitude of the film. If a roentgenogram is underexposed, it will be lower in opaqueness and lower in contrast than a normally exposed film. If it is overexposed, it will be greater in opaqueness and lower in contrast than a normally exposed film.

#### Experiment 2:

Exposure: Within the latitude of film and contrast.

Fig. 2, A, B, C, and D—The same negatives were used as in Experiment 1; however, in this series, the printing exposures were adjusted to compensate for the film opaqueness.

A: Exposure 1/50 second; 11 minute development.

B: Exposure 1/25 second; 11 minute development.

C: Exposure 1/10 second; 11 minute development.

D: Exposure 1/5 second; 11 minute development.

Conclusion: This group clearly illustrates that within the latitude of the film, exposure increases the negative opaqueness proportionately and although the negative appears darker, it does not change the final contrast.

#### Experiment 3:

Fig. 3, A, B, and C—The patient was a boy, aged 14. Intermediate film was used under identical conditions except for the strength of the developer: C developer was stronger than B and B was stronger than A. The strength of the solutions used was varied by the sodium carbonate content. Even 10 grains has a marked influence. The sodium carbonate content was as follows:

A: 72 grains per 28 ounce solution.  
B: 82 grains per 28 ounce solution.  
C: 92 grains per 28 ounce solution as against the average conventional caustic developer of 856 grains per 32 ounce solution.

Conclusions: The weaker the solution, the greater the latitude or range in exposure; latitude of exposure is not a constant of the emulsion but varies with the degree of development. Length of development: 12 minutes (pyrometol<sup>1</sup>).

It should be stated that the potassium bromide factor is more restraining in the caustic five-minute developer; nevertheless, the more sodium carbonate used, the greater the likelihood of blocking up essential diagnostic detail.

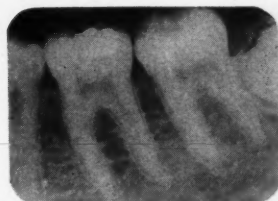


Fig. 3A—1 second

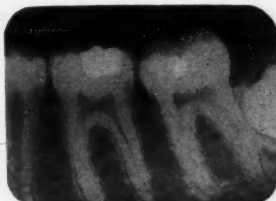


Fig. 3B—1 second

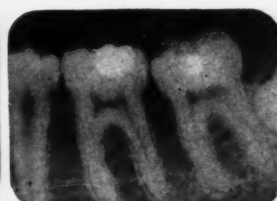


Fig. 3C—1 second



Fig. 3A—2 seconds



Fig. 3B—2 seconds

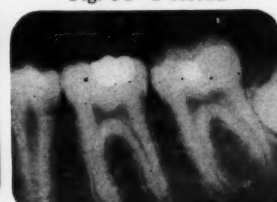


Fig. 3C—2 seconds

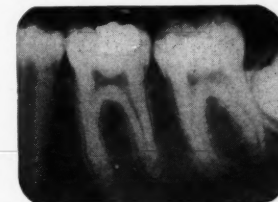


Fig. 3A—3 seconds

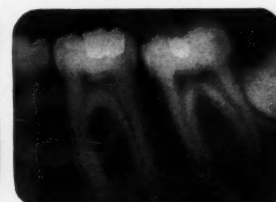


Fig. 3B—3 seconds



Fig. 3C—3 seconds



Fig. 3A—4 seconds

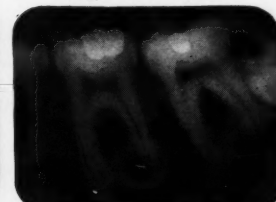


Fig. 3B—4 seconds



Fig. 3C—4 seconds

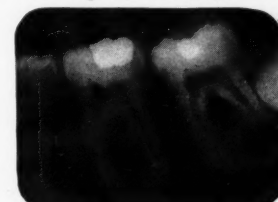


Fig. 3A—5 seconds

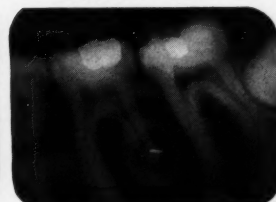


Fig. 3B—5 seconds



Fig. 3C—5 seconds

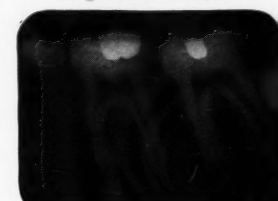


Fig. 3A—6 seconds



Fig. 3B—6 seconds



Fig. 3C—6 seconds

rate. The combination of a fast film and a strong developer permits only a narrow range in exposure; thus, the usual procedures to a large extent account for the general defect of fogged roentgenograms from overdevelopment and overexposure.

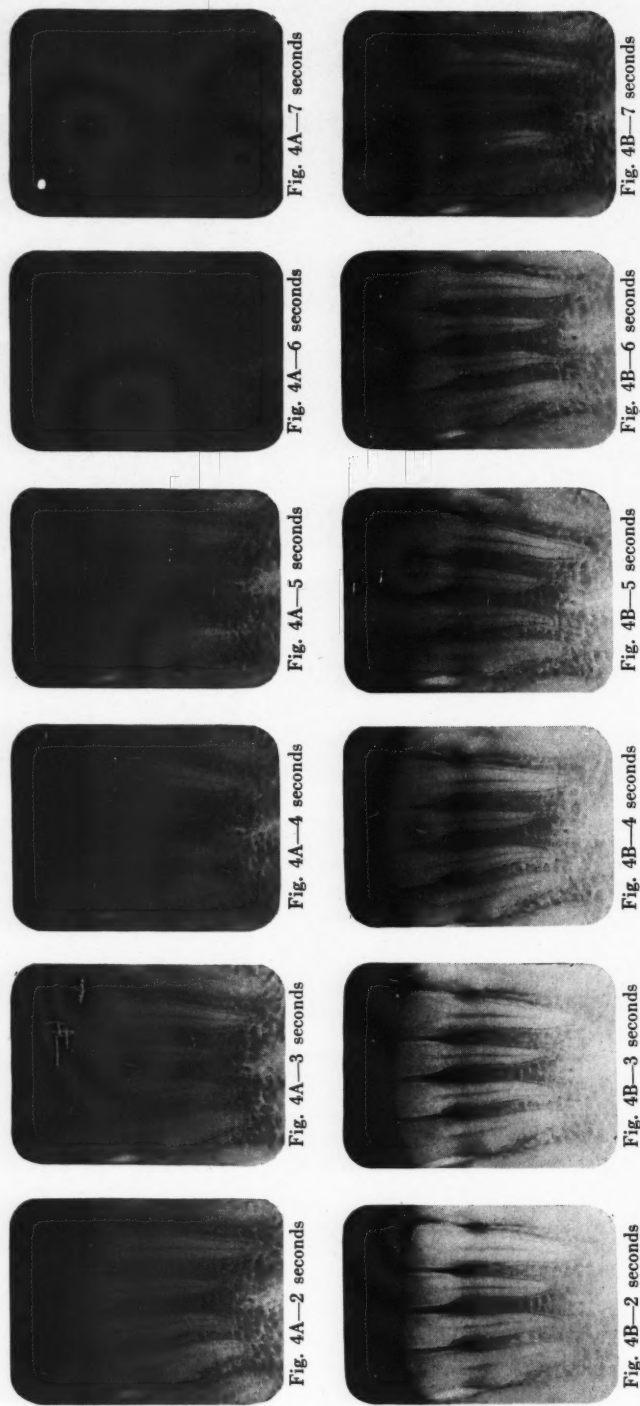
2. With the application of the photographic principles of exposure and contrast, and the use of a slow film and weaker developer which afford greater latitude in exposure, the same expo-

sure for each region may generally be given for all types<sup>1</sup> (adolescent, adult, and senile), and the contrast in each group may be controlled by varying the length of time for development.

3. If double films are used, there is still greater control in processing.

<sup>1</sup>Schugar, George: A Standardized Procedure for Roentgenography, DENTAL DIGEST, 47:447 (October) 1941.





#### Experiment 4:

Fig. 4, A and B—Both A and B were exposed and developed under similar conditions. Length of development 10 minutes (pyro-metol). An intermediate speed film was used for A; a slow speed for B. All slow films were 100% diagnostic. Conclusion: The slower the film, the greater the latitude in exposure.

#### Experiment 5:

Fig. 5, A, B, and C—Contrast was determined by the length of development. All prints were made on the same contrast paper and show different degrees of contrast. Contrast is the difference between densities (opaqueness) and is controlled by the length of development.

A: Exposure 1/20 second; 3 minute development.

B: Exposure 1/20 second; 6 minute development.

C: Exposure 1/20 second; 12 minute development.

Conclusion: Experiment 5 shows why all roentgenograms should not be developed the same length of time but according to the contrast range of the jaw.



Fig. 5A

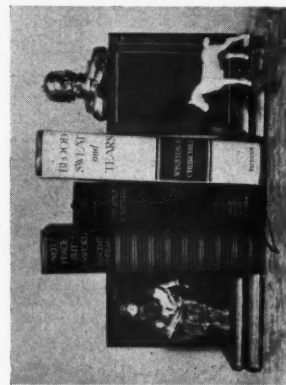


Fig. 5B



Fig. 5C



Fig. 5C



Fig. 6A



Fig. 6B

#### Experiment 6:

Fig. 6, A, B, and C—Detail, contrast, and fog are illustrated. These prints were made from the same negative and were printed on different contrast papers; however, the same illustrations can be made on the same contrast

paper by varying the extent of development of each negative. The prints show in sequence that the softer the negative is, the greater the detail. An increase in contrast shows a corresponding decrease in detail (note shadows), and finally, the continuation of development

after the maximum contrast is achieved (when all "activated" silver salts are developed) results only in the production of fog.

Conclusion: Roentgenograms rich in detail make the best type of diagnostic film.



Fig. 7A



Fig. 7B

#### Experiment 7:

Fig. 7, A and B—Exposure: 1/20 second. Development: 11 minutes. Temperature and solution constant.

A: No agitation.

B: Agitation every 1/2 minute for 5 seconds. Opacity grows with development. The

density (opacity) of B required twice the exposure for printing as did A. All other printing factors were similar.

Conclusion: Agitation increases the rate of development for a given period and should not be varied once the frequency has been determined.



Fig. 9A

#### Experiment 8:

Fig. 8—Roentgenograms (bite-wings) made for a girl, aged 5 1/2 years, with slow films. Shows practical application of exposure and contrast. Exposure: 8 seconds. Development: 4 and 6 minutes (pyro-metol).



Fig. 8—4 minutes

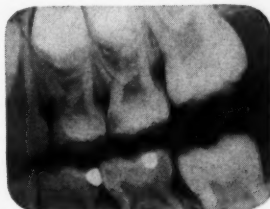


Fig. 8—4 minutes



Fig. 8—6 minutes

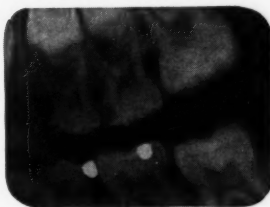


Fig. 8—6 minutes

4. For purposes of standardization and more balanced results, develop only in fresh solution at 65° F.

5. The frequency of agitation should be systematically regulated to insure proper development.

6. Basically, the obstacles that discourage and impede the progress and widespread application of roentgenography and account in a measure for mediocre roentgenographic results are fast films and caustic developers—combined with indifference and careless-

ness in the dark room.

7. Roentgenography is an exact science, and its final products must possess good composition, razor-edged definition, and maximum anatomic detail. Too much emphasis, therefore, cannot be placed on the use of slow films, weaker developers, and the applied photographic principles.

3400 Fifth Avenue.



Fig. 9B



Fig. 9C

#### Experiment 9:

Fig. 9, A, B, and C—The influence of temperature on the rate of development is illustrated; also, the effect of temperature on the balance of the developer. Metol is little affected by changes in temperature; hydroquinone is inactive at 55° F. (grayish print), and exceedingly active at 75° F. (black print).

A: 55° F.; 8 minute development.

B: 65° F.; 8 minute development.

C: 75° F.; 8 minute development.

Conclusion: 65° F. assures the best balanced results.

# Hook Eyelet Method of Fracture Wiring

JOHN J. HALL, D.M.D., Helena, Montana

## DIGEST

The technique suggested combines the hook eyelet method of fracture wiring with simplified adaptation of elastic stabilization.

The materials needed are readily available.

The method can be used in a large percentage of the fractures presented. The lack of bulk adds greatly to the patient's physical comfort. The elastic traction provides the comfortable feeling on the patient's part that it would be possible to open the wiring should it become necessary.

THE EYELET METHOD of wiring, first suggested by Colonel R. T. Oliver, has been more universally taught and can be used successfully in a greater number of fractures of the jaws than any other one method now well known to the profession. As now commonly used, the eyelets of the opposing arches are connected with wire to produce fixation. In highly cooperative patients, or when unusual muscle pull is not present, little stretch to the wires results; but in most patients, constant tightening of the connecting wires is necessary.

In an effort to eliminate this constant need of care to the wires, methods of wiring using elastic traction have been suggested. These have involved the use of arches with lugs on them and buttons and hooks of various kinds. Most of these methods lack the simplicity of the original eyelet method of wiring.

The method I describe retains all the good features of the eyelet method

of wiring, is not complicated or bulky, and adapts itself to elastic stabilization. With elastic stabilization the care of simple fractures is reduced to helping with mouth hygiene and watching carefully for any sign of infection.

## Technique

1. To make a hook eyelet, from 6

inches to 8 inches of 26 gauge stainless steel, or 24 gauge soft brass or bronze wire, are cut from the coil.

2. The assistant holds an explorer. An eyelet is made in the center of the wire about the explorer and three snug turns are made in the wire.

3. The explorer is again placed between the wires and another eyelet

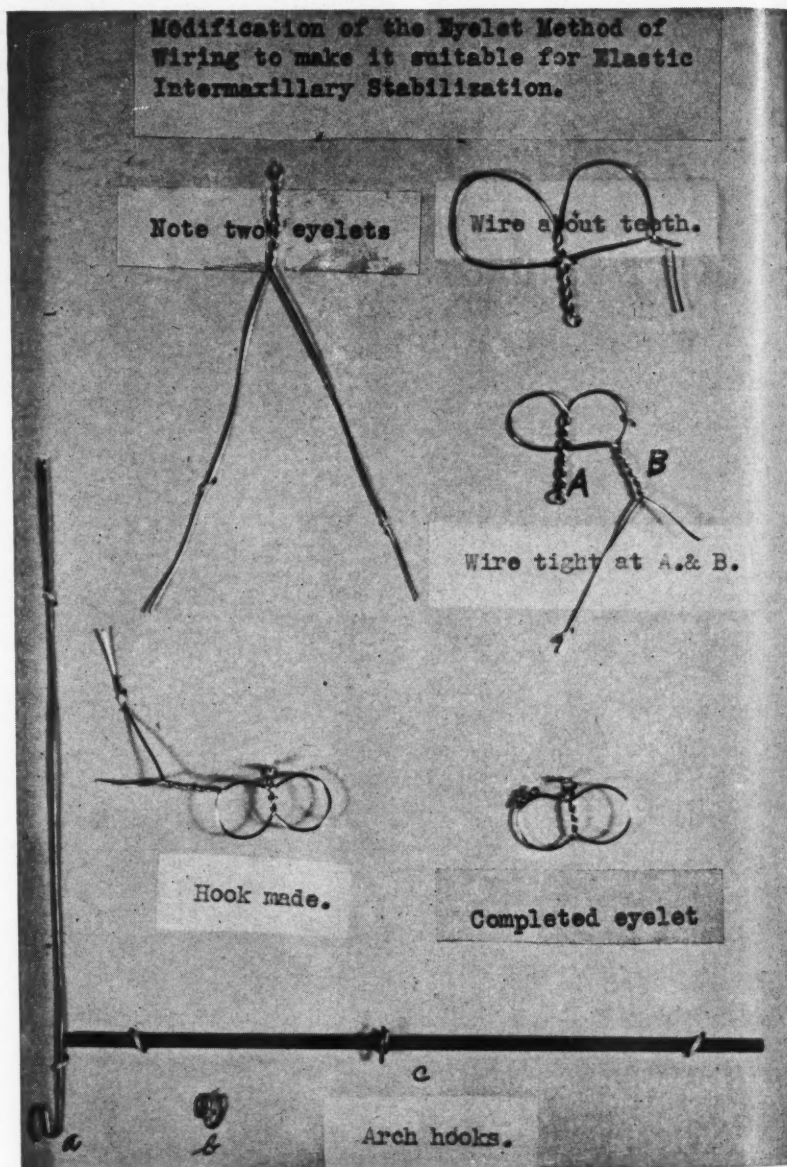


Fig. 1



made, followed by another turn. This is just as eyelets have been made previously except for the added eyelet and the three turns of wire.

4. The double wire is then threaded between the teeth at the point selected.

5. One end of the wire is passed around the neck of the tooth distally and the other around the neck of the tooth mesially.

6. The wire around the tooth at the distal is then passed through the second eyelet and the two wires are pulled snugly to the teeth, grasped with a needle holder, and twisted tightly.

7. The end is cut short and folded against the teeth.

8. The first eyelet is grasped with the needle holder and twisted until it becomes firm.

9. The first eyelet is then grasped with straight beak pliers, and the twisted wire is bent between the first and second eyelets to form the hook.

The purpose in having the wires tight is to adapt them snugly to the necks of the teeth. Tightening them in both positions makes this even more complete. Although the teeth will adjust themselves until the wire is no longer tight, the wires will stay where placed because they are exactly adapted about the necks of the teeth.

10. Having placed the hook eyelets on the maxillary and mandibular teeth, in the positions determined necessary to produce the desired traction, apply intermaxillary elastics sufficient to produce reduction and stabilization. Superfluous traction only produces discomfort, and undue strain on the appliances.

**Number and Position of Eyelets—**The ingenuity of the operator and necessity of the case must determine the number and position of the eyelets placed. More eyelets may be added and maybe some dispensed with as the case progresses. Possibly, a complete reduction of the fracture cannot be made at the time the wires are applied, and reduction becomes complete only after from twenty-four to forty-eight hours, because of the pull of the elastic traction. Many fractures, even complicated ones, can be reduced and stabilized in this simple manner.

**Use of an Arch—**At times it becomes necessary to use an arch on the mandi-

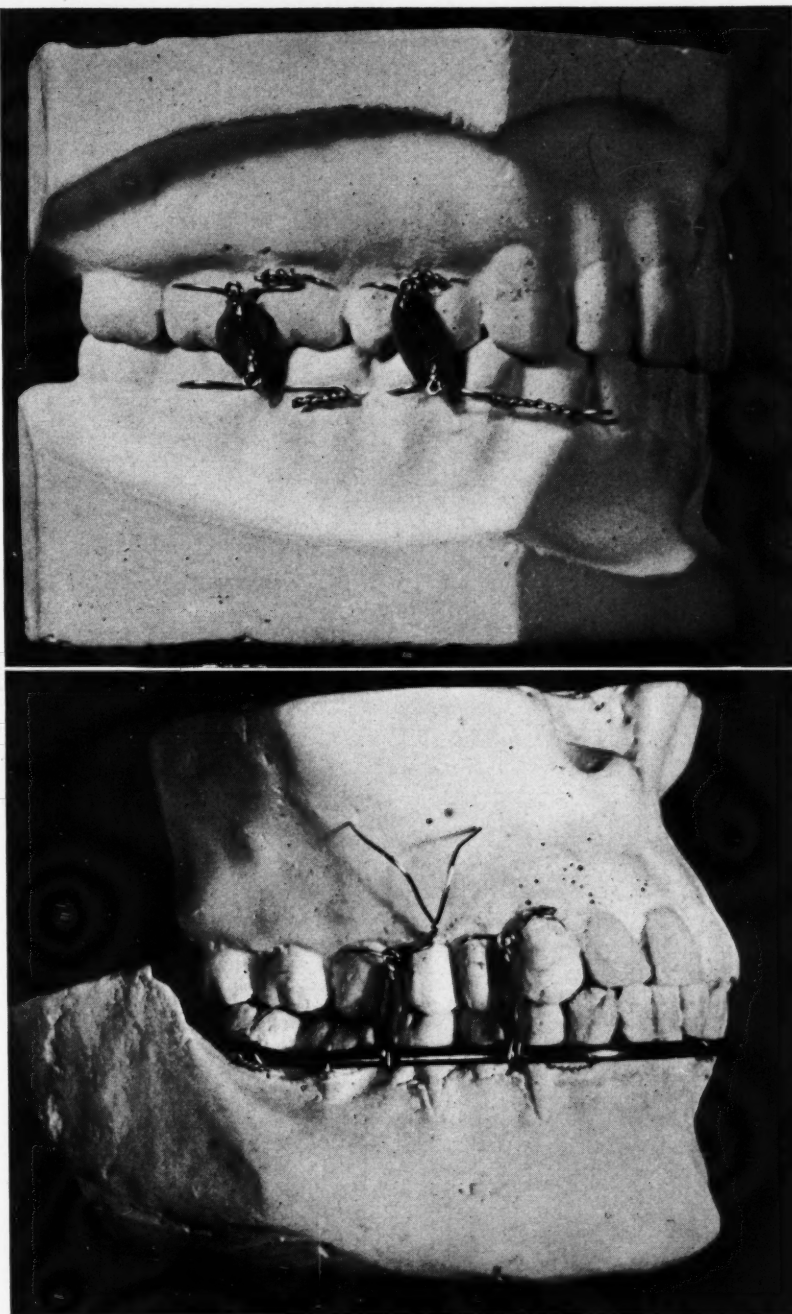


Fig. 2 (top)—Hook eyelets and elastic intermaxillary traction.  
Fig. 3—Arch hooks on mandibular arch; hook eyelets on maxilla.

ble and less often on the maxilla. When it is advantageous to do so, a half round arch of nickel silver or other soft wire, 2 mm. wide, is wired directly to the teeth. Arch hooks are made as shown in Fig. 1 and placed on the arch. If their position can be anticipated, they are made on the arch before wiring it to

the teeth; but if the operator fails to do so, he may make them in the mouth after the arch has been placed. This makes it possible to use hook eyelets in the opposing arch and elastic stabilization of the fracture. The hooks are made of 22 gauge soft nickel silver wire.

303 Power Block.

# A Plastic Adhesive Material Impression Tray

JOHN A. JACKSON, D.D.S.,  
Albion, New York

## DIGEST

An inexpensive and simple technique is described and illustrated for constructing an impression tray from a readily available glue.

I HAVE EXPERIMENTED with a glue, cascamite plastic adhesive, to produce a tray on the cast made from a snap impression. The result equals any vulcanite tray.

### Advantages

1. The total working time is only ten minutes.
2. The cost per tray is not more than one cent.
3. The tray is waterproof, perfectly clean and tasteless.
4. The tray can be made as light or as heavy as is desired.

I feel that it should be a valuable contribution, particularly inasmuch as valuable materials are conserved by substituting inexpensive and simple ones.

The technique is described in the legends to the accompanying illustrations.

*Waterman Building.*

### Technique:

Figs. 2 and 3—The cast to be used is thoroughly lubricated with petroleum jelly for a suitable distance beyond the area upon which the tray is to be constructed. Mix the cascamate, approximately two parts to one of water. This will result in a thick and tenacious paste. Combine this paste with the paper pulp.



Materials:

Fig. 1

Fig. 1—At any hardware store obtain a can of cascamate plastic adhesive. If desired, a small amount of vermilion may be added to the cascamate and incorporated into it by thorough shaking. This pigment will impart a desirable pink color to the finished tray. Shred a clean paper towel, soak, and manipulate it until a pulpy mass results. Squeeze this almost dry.



Fig. 2

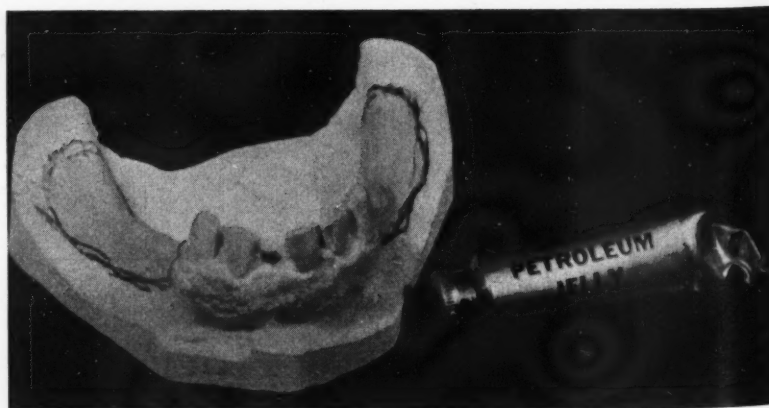


Fig. 3



Fig. 4

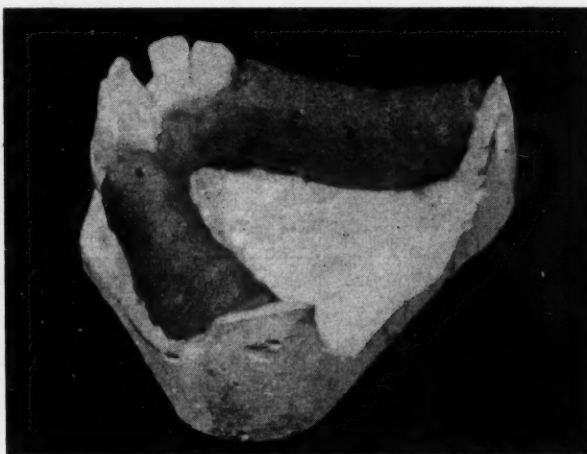


Fig. 5

Figs. 4 and 5—With the fingers or a wax spatula build this mix on the cast to about one-eighth inch in thickness. Where additional strength is desired, increase the thickness slightly. Mold the mate-

rial to the pencilled outline of the proposed tray. A handle may be molded onto the anterior part.

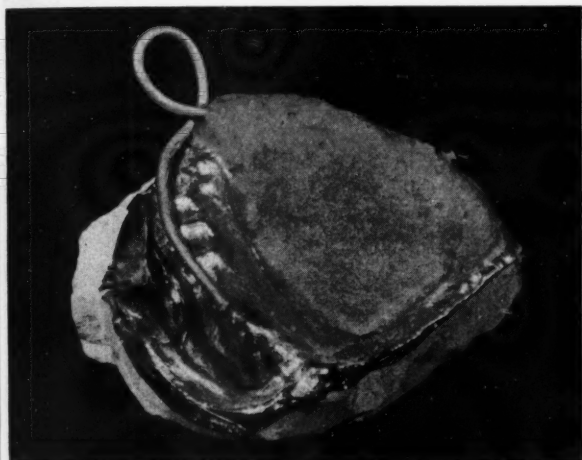


Fig. 6

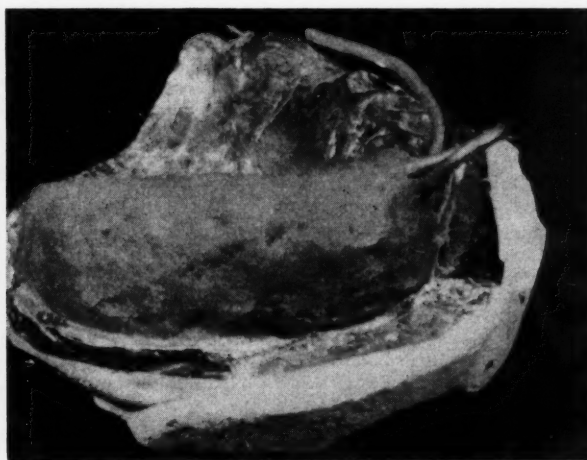


Fig. 7

Figs. 6 and 7—As an alternative method the cast may first be covered with foil. This will then act as a separating medium. A wire handle may be easily added.

After the tray has been formed in this manner, place the cast on a warm radiator or other suitable location where a moderately warm temperature will hasten the setting of the material. Depend-

ing on this temperature, the tray will be completely hard in from two to six hours. Remove the tray and trim off any excess that may appear. It is important that the tray be placed now in a humidior or kept slightly moist until it is to be used. If allowed to dry further, a contraction will occur ruining the perfect fit that would otherwise have resulted.

## Unsolicited Manuscripts

FROM TIME TO time THE DENTAL DIGEST receives inquiries regarding its attitude toward unsolicited manuscripts. These are especially welcome. There are many excellent dentists who have original suggestions, who have improved or modified a technique or have refined an operation; but these men do not contribute to the literature because they are afraid that they do not know how to "write." Dentists are not expected to be "writers." If they will tell their stories in a straightforward manner, the editors will be happy to cooperate with them in presenting their material. Unsolicited manuscripts sent to THE DENTAL DIGEST are read with care and open-mindedness and are reported on promptly. Note special announcement on page 148.



# Food Tables\*

[ Reproduced from NORMAL NUTRITION (1939 Revision), a publication of the Department of Preventive Dentistry, Faculty of Dentistry, University of Toronto. ]

Group 1. Fruits	Group 9. Fowl
2. Vegetables	10. Soups
3. Dairy products and fats	11. Salads
4. Egg and cheese dishes	12. Sugars, jams, etc.
5. Cereals	13. Beverages
6. Breads, cakes	14. Pies and desserts
7. Meat	15. Miscellaneous
8. Fish	

## Regulating foods

— constipating	}	+ total should exceed
+ regulating		— total

## Mastication

Points per average serving	0—Liquids	Average for the day should be 3 (omitting zero values for liquids)
	1—Soft food	
	2—Slight mastication	
	3—Average mastication	
	4—Heavy mastication	

## Vitamins

Vitamin values are given in Biological Units (except vitamin D), because their relations to International Units are not yet accurately known and most of the determinations on foods have been made by means of the biological methods.

The values, except where followed by (R), are taken from the U.S. Dept. of Agriculture publication No. 275 by Daniel and Munsell (1937).

(R) values are taken from Rose, *Foundations of Nutrition*.

Values for vitamin units are for uncooked food unless specified cooked.

If the quantitative values are not known, but the food is known to contain the vitamin, plus signs are used, 1 plus indicating its presence and 2 that the food is a good source of the vitamin.

If the vitamin is known to be absent, a minus sign is used, and if not determined, the space is left blank.

Vitamin Units Used: A—Sherman-Munsell Unit.  
 B<sub>1</sub>—Sherman-Chase Unit.  
 B<sub>2</sub>—Sherman-Bourquin Unit.  
 C—Sherman-LaMer Unit.  
 D—International Unit.

\*The booklet from which this material is reproduced is now undergoing revision, according to a communication we have received from Dean Arnold D. Mason of the Faculty of Dentistry, University of Toronto. In the revised edition the vitamin values are to be expressed by weights rather than in units as herein given.

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Factor	Masti- lating Factor	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base			A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 1—Fruits																		
Apple.....	1 medium	4.5	80	2	4	74	.009	.015	.00045	..	6	+	3	102	32	25	12 (R)	..
Apple Sauce.....	½ cup	4.4	133	2	3	128	.007	.013	.00030	..	2	+	1	50 (R)	30 (R)	22 (R)	2 (R)	..
Apricots, dried.....	4.5 halves	0.7	50	4	1	45	.011	.022	.00138	..	5.5	+	2	1,260	..	..	4	..
Apricots, stewed.....	4 halves, 2 tbsp. juice	4.9	100	5	1	94	.014	.026	.00050	..	..	+	2	+	..	..	..	..
Banana.....	1 medium	3.5	100	5	6	89	.008	.028	.00065	..	5.6	+	2	275	30	35	18	..
Blackberries.....	½ cup	2.9	50	4	8	38	.026	.026	.00073	..	..	+	2	160	..	..	5	..
Blueberries.....	½ cup	2.6	50	2	4	44	.018	.015	.00068	..	..	+	3	20	..	..	4	..
Cantaloupe.....	½ melon, 4½ inches	6.5	50	3	..	47	.020	.019	.00070	..	14.7	+	2	778	37	..	64	..
Cherries, fresh.....	½ cup stoned	1.2	25	1	2	22	.007	.011	.00013	..	2.0	+	2	144	..	..	6	..
Cranberries, fresh.....	½ cup	1.3	25	1	3	21	.007	.005	.00023	*	..	+	1	10	0	0	13	..
Currents, fresh.....	½ cup	2.1	33	4	..	29	.015	.021	.00038	..	..	+	2	..	..	..	18 (R)	..
Currents, dried.....	3 tbsp.	1.1	100	3	5	92	.025	.060	.00124	..	1.8	+	2	..	..	..	..	..
Dates, dried.....	4 dates	1.0	100	2	7	91	.020	.016	.00105	..	3.2	+	3	40	11	0	0	..
Figs, dried.....	2 medium	1.1	100	5	..	95	.052	.037	.00090	..	32.3	+	3	12	11	13	0	..
Fruit cup.....	½ cup mixed fruit	4.8	100	4	4	92	.032	.039	.00089	..	3.4	+	3	124	39	27	35	..
Grapefruit.....	½ medium	7.5	100	7	4	89	.048	.045	.00060	..	5.6	+	1	0	43	86	110	..
Grapes (Concord).....	1 bunch (large)	4.9	100	5	15	80	.020	.036	.00075	..	2.8	+	2	35	28	0	4	..
Honeydew Melon.....	1 melon	3.6	16	..	..	16	..	..	.00075	..	..	+	2	..	..	..	..	..
Lemons.....	1	3.8	33	3	5	25	.017	.008	.00045	..	4	+	0	—	+	+	49	..
Lemon juice.....	1 tbsp.	0.5	5	..	..	5	.005	..	.00010	..	.5	+	0	—	+	+	10	..
Olives, green.....	2 large or 3-4 medium	0.7	25	1	19	5	.010	.001	.00056	..	4.7	+	2	56	..	..	..	..
Orange.....	1 large	7.2	100	7	2	91	.051	.041	.00100	..	10.9	+	0	134	120	70	130†	..
Orange.....	1 medium	5.5	80	6	1	73	.041	.031	.00080	..	8.7	+	0	104	94	55	101	..
Orange.....	1 small	3.5	50	4	..	46	.025	.022	.00050	..	5.5	+	0	67	60	35	65	..
Orange juice.....	½ cup (scant)	3.5	56	2	..	54	.026	.022	.00025	..	4.5	+	0	67	60	35	65	..
Peaches, fresh (yellow).....	1 medium	3.5	53	2	1	50	.010	.019	.00030	..	5.0	+	2	1,000	+	..	10 (R)	..
Peaches, canned or stewed.....	2 large halves and 3 tbsp. juice	7.5	100	6	2	92	.021	.031	.00040	..	10.0	+	2	+	..	..	..	..
Pears, fresh.....	1 large	3.5	63	2	4	57	.013	.016	.00030	..	3.6	+	2	12	35	75	7	..
Pears, canned.....	2 hlvs. and 2 tbsp. juice	3.5	66	2	3	61	.009	.018	.00020	..	1.7	+	1	..	..	..	..	..
Pineapple, fresh.....	1 slice ¾ in. thick	3.1	50	2	3	45	.007	.010	.00032	..	7.9	+	3	69	44	22	22 (R)	..
Pineapple, canned.....	2 slices, 3 tbsp. juice	3.7	100	1	4	95	.005	.009	.00020	..	..	+	3	30 (R)	26 (R)	10 (R)	22 (R)	..
Pineapple juice.....	½ cup (scant)	3.5	65	..	..	65	.016	.013	.00010	..	..	+	0	110 (R)	70 (R)	10 (R)	20	..
Plums, fresh.....	3-4 large	6.4	100	5	..	95	.036	.048	.00100	*	..	+	2	..	146 (R)	..	18	..
Prunes.....	4 medium sized	1.4	100	3	..	97	.019	.028	.00094	*	..	+	2	833	+	87	5	..
Prunes, stewed.....	2 prunes, 2 tsp. sugar	..	100	2	..	98	.009	.014	.00050	*	..	+	2	+	+	+	..	..
Pumpkin, cooked.....	1 cup	6.5	70	7	4	59	.062	.123	.00250	..	4	+	1	+	+	+	..	..
Raisins.....	½ cup seeded, 2 tbsp. seedless	1.0	100	3	9	88	.017	.038	.00085	..	6.8	+	3	21	0	..	0	..
Raspberries.....	½ cup, fresh, red	2.6	50	5	7	38	.030	.029	.00068	..	..	+	2	+	+	..	26	..
Rhubarb, raw.....	1 cup 1" pieces	3.9	20	2	1	17	.048	.020	.00062	..	7.5	+	..	..	..	..	37 (R)	..
Rhubarb, fresh stewed.....	½ cup (sweetened)	0.9	50	1	1	48	.024	.010	.00031	..	4.7	+	1	..	..	..	..	..
Strawberries, fresh.....	½ cup	4.5	50	5	7	38	.042	.035	.00088	..	..	+	2	115 (R)	..	..	64	..
Watermelon.....	¼ in. slice—6 in. diam.	11.7	100	5	6	89	.028	.044	.00075	..	8.9	+	2	298	56	46	46	..

†Based on figures for orange juice.

\*Acid ash due to content of benzoic acid.

Food	Portion	Weight Oz.	Total Calories	Calories			Grams in Portion			End Product		Regulating Factor	Mastication	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base			A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 2—Vegetables																		
Artichokes.....	1	8.8	158	30	10	118	.099	.233	.00240	...	...	+	2	700	..	..	45	..
Asparagus, fresh.....	6 stalks, 5" long	1.8	13	5	1	7	.010	.018	.00050	...	0.4	+	2	350	..	..	20	..
Asparagus, canned tips.....	½ cup drained	3.0	25	9	4	12	...	...	...	...	...	+	1	..	..	..	..	..
Beans, baked, canned.....	½ cup	3.5	128	28	22	78	.062	.185	.00205	...	6.0	—	2	..	..	..	..	..
Beans, lima, dried.....	½ cup	1.0	100	21	4	75	.021	.112	.00280	...	12.0	—	2	..	65	90	—	..
Beans, lima, fresh.....	½ cup	3.0	100	23	5	72	.023	.110	.00195	...	12.0	+	2	..	92	80	24	..
Beans, string, green.....	¾ cup	2.4	28	6	2	20	.038	.036	.00076	...	3.7	+	2	700	28	17	17	..
Beans, Soy, dried.....	2 tbsp.	1.0	100	32	35	33	.069	.194	.00195	...	...	—	2	..	145	261	..	..
Beets.....	2 medium, ½ cup diced	3.9	50	7	1	42	.031	.046	.00094	...	11.8	+	2	0	11(R)	55	11	..
Broccoli, steamed.....	½ cup	3.5	36	14	..	22	.140	.066	.00140	...	...	+	2	350(R)	40(R)	140	18	..
Brussels Sprouts.....	7 sprouts	3.5	58	17	5	36	.028	.019	.00115	...	...	+	2	300	+	+	55	..
Cabbage.....	½ cup shredded	2.3	20	4	2	14	.030	.018	.00025	...	3.6	+	3	33	33	40	36	..
Carrots.....	1 large or ½ cup diced	3.5	45	5	3	37	.048	.045	.00060	...	10.8	+	2	3,000	50	50	7	..
Cauliflower.....	¼ of small head	2.9	25	6	4	15	.100	.049	.00080	...	4.4	+	2	41	..	49	45	..
Celery, uncooked.....	4 stalks (½ cup diced)	3.5	22	6	1	15	.078	.049	.00060	...	7.2	+	3	15	++	..	10	..
Chard, steamed.....	¾ cup	7.0	50	17	6	27	.200	.099	.00618	...	20.6	+	2	34,400	+	+	..	..
Corn, canned.....	¾ cup	4.5	130	15	14	101	.008	.129	.00058	...	...	+	2	..	..	..	..	..
Corn, fresh.....	2 ears, 6" long	3.4	100	12	9	79	.006	.096	.00045	1.8	...	+	3	..	+	+	17	..
Cucumbers.....	5-6 thin slices	1.5	5	1	1	3	.004	.007	.00010	...	2.3	+	2	11	+	..	11	..
Egg Plant.....	2 slices, ¾" thick	3.5	28	5	..	23	.012	.031	.00050	...	...	+	2	50	40(R)	22(R)	7	..
Lentils, dried.....	2½ tbsp.	1.0	100	29	3	68	.030	.110	.00245	1.5	...	+	2	..	17(R)	13	4	..
Lettuce.....	About ½ of head	1.8	10	3	1	6	.009	.022	.00030	...	3.8	+	3	*62	18	10	15	..
Onions.....	1 large	3.5	50	7	3	40	.042	.048	.00060	...	1.5	+	2	0	117	+	..	..
Parsnips.....	1 medium ½ cup cubes	5.4	100	10	7	83	.072	.091	.00120	...	18.2	+	2	..	..	..	..	..
Peas, canned.....	½ cup	5.2	100	27	3	70	.023	.126	.00190	...	1.2	+	2	..	+	+	..	..
Peas, green, fresh.....	¾ cup	3.5	100	28	4	68	.023	.126	.00200	...	1.2	+	2	1,000	50	50	40	..
Peppers, green.....	1 3½" long	2.4	20	3	1	16	.008	.019	.00027	...	...	+	3	665	8	8	140	..
Potato Chips.....	8-10 pieces	0.6	100	5	63	32	.007	.028	.00055	...	3.9	—	2	..	..	..	..	..
Potatoes, baked.....	1 medium	3.0	100	11	1	88	.014	.057	.00110	...	6.4	+	2	35	35	22	13	..
Potatoes, boiled with skins on.....	1 medium	3.0	100	11	1	88	.014	.057	.00110	...	6.4	+	2	35	35	22	13	..
Potatoes, creamed.....	½ cup	3.1	100	7	48	45	.007	.028	.00055	...	3.9	—	1	..	..	..	..	..
Potatoes, sweet.....	½ medium	2.9	100	6	5	89	.016	.036	.00065	...	5.4	+	2	4,050	57	28	12	..
Radishes.....	5 red button	1.8	15	3	..	12	.021	.021	.00080	...	1.4	+	3	..	13	13	25	..
Sauerkraut, canned.....	¾ cup	3.5	27	7	4	16	.039	.009	.00330	...	...	+	2	..	+	+	20(R)	..
Spinach, steamed.....	½ cup	2.9	20	7	1	12	+	.040	.00213	...	22.1	+	2	12,350(R)	65(R)	82(R)	74(R)	..
Squash, Hubbard, steamed.....	¾ cup	3.5	42	6	3	33	.018	.026	.00055	...	3.0	+	1	5,000(R)	..	..	..	..
Squash, summer, steamed.....	¾ cup	3.1	20	2	2	16	.018	.018	.00035	...	...	+	1	300(R)	..	..	..	..
Tomato juice.....	½ cup (scant)	3.5	25	4	4	17	.009	.031	.00045	...	6.1	+	0	600(R)	30(R)	20(R)	30	..
Tomatoes, canned.....	½ cup	3.9	25	5	2	18	.012	.032	.00054	...	6.1	+	1	1,688	40	14	34	..
Tomatoes, fresh.....	1 large	7.7	50	8	8	34	.024	.064	.00108	...	12.0	+	1	3,375	79	27	68	..
Turnips.....	½ cup cubes (¾")	2.6	25	4	1	20	.041	.035	.00040	...	2.0	+	1	..	22	14	29	..

\*Applies only to bleached iceberg.—An equal amount of green leaf lettuce contains approximately 2,000 units.

†Not nutritionally available.



Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Factor	Masti- cation	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base			A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 3—Dairy Products and Fats																		
Butter.....	½ tbsp. (1 sq. 1½x1½")	0.3	50	..	50	..	.001	.002	.00002	..	..	+	0	154	..	..	..	6
Cheese, Cheddar.....	1½ inch cube	0.8	100	26	74	..	.212	.158	.00030	1.2	..	—	3	575	..	46	..	..
Cheese, Cottage.....	2½ tbsp.	1.6	50	38	..	12	.038	.119	..	..	..	+	1	36	+	+	—	..
Cream, 8% (cereal and coffee).....	2 tbsp.	1.0	25	5	13	7	.030	.026	.00010	..	0.3	—	0	109	..	..	..	..
Cream, 16%.....	2 tbsp.	1.0	53	4	43	6	.028	.024	.00006	..	0.1	+	0	218	..	..	..	..
Cream, 24%.....	2 tbsp.	1.0	74	4	65	5	.026	.021	.00006	..	0.1	+	0	218	..	..	..	..
Cream, 32%.....	2 tbsp.	1.0	94	4	86	4	.024	.020	.00006	..	0.1	+	0	500 (R)	..	..	..	..
Milk—whole.....	¾ cup or 1 glass	6.5	127	25	66	36	.217	.171	.00045	..	3.2	—	0	302	37	110	0	4
skim.....	1 cup	9.6	88	33	5	50	.292	.229	.00060	..	5.0	—	0	5	27 (R)	76 (R)	0	..
buttermilk.....	1 cup	8.5	88	29	12	47	.260	.238	.00060	..	5.3	+	0	—	27 (R)	78 (R)	0	..
condensed (sweetened).....	1½ tbsp.	1.1	100	11	23	66	.097	.070	.00020	..	1.4	—	0	+	+	+	+	..
evaporated (unsweetened).....	4½ tbsp.	2.5	100	20	50	30	.223	.176	.00050	..	2.7	—	0	310 (R)	18 (R)	96 (R)	+	..
(whole) powder.....	2½ tbsp.	0.7	100	20	50	30	.181	.141	.00030	..	3.2	—	0	240 (R)	30	100	0	..
(skim) powder.....	4 tbsp.	0.8	100	47	2	51	.333	.262	.00070	..	5.0	—	0	5	41	156	..	..
Lard.....	1 tbsp. (scant)	0.4	100	..	100	..	..	..	..	..	..	+	..	0	—	—	—	..
Olive Oil.....	1 tbsp.	0.4	100	..	100	..	..	..	..	..	..	..	0	0	—	—	—	..
Cod Liver Oil.....	1 tbsp.	0.4	100	..	100	..	..	..	..	..	..	..	0	6,660	—	—	—	940
Group 4—Egg and Cheese Dishes																		
Bacon and Eggs.....	1 egg, 2 slices	1.8	125	33	92	..	.034	.123	.00184	6.0	..	—	3	500	25	85	0	..
Cheese Soufflé.....	1 serving	..	198	38	142	18	.215	.195	.00109	4.2	..	—	1	+	+	+	—	..
Egg.....	1	1.0	75	27	48	..	.033	.115	.00159	5.6	..	—	1	500	25	55	0	8
Egg, white.....	1	1.0	17	16	1	..	.005	.005	.00006	1.6	..	—	1	0	0	23	..	0
Egg, yolk.....	1	0.6	58	11	47	..	.022	.097	.00130	4.0	..	—	1	500	25	29	..	8
Macaroni and Cheese.....	1 serving	..	281	48	122	111	.294	.256	.00084	0.4	..	—	2	+	+	+	..	..
Omelet.....	2 eggs	150	150	54	96	..	.067	.230	.00318	11.2	..	—	1	1,000	50	110	0	16
Welsh Rarebit.....	1 serving	..	188	46	136	6	.355	.274	.00076	2.5	..	—	0	+	+	+	..	..

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Masti- cation	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base		A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 5—Cereals																	
Barley, pearled.....	1 thsp.	0.5	50	5	1	44	.003	.025	.00024	1.5	...	—	—	—	—	—	..
Cornflakes.....	$\frac{2}{3}$ cup	1.0	100	9	1	90	.004	.031	.00070	...	...	—	—	—	—	—	..
Cornmeal, cooked.....	$\frac{2}{3}$ cup	6.0	100	10	5	85	.005	.031	.00025	1.5	...	+	170 (R)	31 (R)	10 (R)	—	..
Corn starch.....	1 thsp.	0.3	34	..	..	34	...	...	...	...	...	—	—	—	—	—	..
Cream of Wheat, cooked.....	$\frac{2}{3}$ cup	6.0	100	12	4	84	...	...	...	...	...	—	—	—	—	—	..
Flour, white, wheat.....	4 thsp. (sifted)	1.0	100	12	3	85	.005	.031	.00030	2.7	...	—	0	1	—	0	..
Flour, white, wheat.....	1 cup (sifted)	3.9	395	50	10	335	.018	.119	.00110	10.8	...	—	0	6	—	0	..
Flour, Graham.....	1 cup	5.0	508	75	28	405	.051	.431	.00510	16.5	...	—	22	220	120	—	..
Grapenuts.....	4 thsp.	1.0	100	12	2	86	...	...	...	...	...	+	..	..	..	..	..
Hominy, cooked.....	$\frac{2}{3}$ cup	6.8	100	9	1	90	.005	.022	.00025	...	...	+	..	..	..	..	..
Macaroni, cooked.....	$\frac{2}{3}$ cup	5.8	100	15	2	83	.007	.040	.00035	...	...	—	—	—	—	—	..
Mead's Cereal, cooked.....	$\frac{1}{2}$ cup (1 oz. uncooked)	...	...	...	...	...	...	...	...	...	...	+	+	+	+	+	..
Oatmeal, cooked.....	$\frac{2}{3}$ cup	4.8	100	17	16	67	.016	.097	.00120	3.	...	+	+	+	+	+	..
Puffed Rice.....	$\frac{2}{3}$ cup	0.4	45	4	..	41	.002	.013	.00010	...	...	—	..	34	..	0	..
Puffed Wheat.....	1 cup	0.5	50	8	2	40	.006	.055	.00110	...	...	—	..	..	..	..	..
Rice, white, cooked.....	$\frac{2}{3}$ cup	4.0	100	9	1	90	.003	.028	.00025	2.7	...	—	0	0	..	0	..
Rice, brown, cooked.....	$\frac{2}{3}$ cup	4.0	100	10	15	75	.018	.097	.00055	...	...	+	..	31	..	..	..
Roman Meal, cooked (approx. analysis).....	$\frac{2}{3}$ cup	108	...	38	5	65	.023	.131	.00052	...	?	+	+	+	+	+	..
Shredded Wheat or Muffins.....	1 biscuit	1.0	100	14	5	81	.011	.088	.00125	3.3	...	+	4	42	22	0	..
Tapioca, cooked.....	$\frac{2}{3}$ cup	2.8	100	..	..	100	...	...	...	...	...	—	..	..	..	..	..
Wheat Germ.....	2 thsp. (ave. serving)	0.6	66	19	18	29	.012	.173	.00123	3.3	...	+	..	202	50	..	..
Group 6—Breads, Cake, etc.																	
Bread, plain or toasted....	1 slice $\frac{1}{2}$ " thick is equal to 2 thin slices	...	...	...	...	...	...	...	...	...	...	—	—	—	—	—	..
White.....	1 slice $4\frac{1}{2}'' \times 4\frac{1}{2}''$	1.0	75	10	4	61	.009	.027	.00027	2.0	...	—	—	61 (R)	—	—	..
Brown (whole wheat)....	1 slice $4\frac{1}{2}'' \times 4\frac{1}{2}''$	1.4	100	14	6	80	.021	.062	.00065	3.0	...	+	—	+	+	—	..
Rye.....	1 slice $3\frac{1}{2}'' \times 4\frac{1}{2}''$	1.0	72	10	2	60	.007	.044	.00045	...	...	+	—	33 (R)	+	—	..
Roll, white.....	1	1.3	100	12	8	80	.005	.022	.00030	2.7	...	—	—	—	—	—	..
Crackers—	...	...	...	...	...	...	...	...	...	...	...	—	..	..	..	..	..
Butter wafers.....	3, 2" in diam.	0.4	50	5	11	34	...	...	...	...	...	—	..	..	..	..	..
Graham.....	$2\frac{1}{2}$ biscuits, $2\frac{1}{2}'' \times 2\frac{1}{2}''$	0.8	100	9	20	71	.005	.048	.00045	...	...	—	..	..	..	..	..
Soda.....	1 biscuit, $2\frac{1}{2}'' \times 2\frac{1}{2}''$	0.2	25	3	5	17	.001	.006	.00009	0.5	...	—	..	..	..	..	..
Cake—	...	...	...	...	...	...	...	...	...	...	...	—	..	..	..	..	..
Fruit.....	1 piece, $2\frac{1}{2}'' \times 2'' \times 1\frac{1}{2}''$	...	120	8	57	55	.009	.025	.00030	0.2	...	—	+	..	..	..	..
Plain.....	medium piece	...	203	13	62	128	.024	.042	.00042	2.8	...	—	+	..	..	..	..
Chocolate.....	medium piece	...	240	16	96	128	.036	.071	.00057	1.7	...	—	+	..	..	..	..
Icing.....	for medium piece	...	120	..	..	120	...	...	...	...	...	—	..	..	..	..	..
Cookies, plain.....	2, $2\frac{1}{2}''$ diam.	...	100	6	33	61	.005	.015	.00017	...	...	—	..	..	..	..	..
Date-Nut Bread.....	1 small slice	1.0	80	6	7	67	...	...	...	...	...	+	..	..	..	..	..
Doughnuts.....	1	1.6	200	12	90	98	...	...	...	...	...	—	..	..	..	..	..
Griddle Cakes.....	2, $4\frac{1}{2}''$ diam.	3.6	200	28	50	122	.049	.077	.00061	2.2	...	—	..	..	..	..	..
Lady Fingers.....	4, $2\frac{1}{2}''$ long	1.0	100	10	13	77	.012	.041	.00061	...	...	—	..	..	..	..	..
Macaroons.....	1	0.4	50	3	16	31	.030	...	...	...	...	—	..	..	..	..	..
Muffins.....	1 large	1.5	114	14	26	74	.030	.043	.00034	2.0	...	—	..	..	..	..	..

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion				End Product		Regu- lating Factor	Masti- cation	Vitamins			
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base	A			B <sub>1</sub>	B <sub>2</sub>	C	D
Group 7—Meat																		
Bacon, broiled.....	2 small slices	0.3	50	7	43	..	.001	.018	.00025	0.4	...	—	3	—	—	30 (R)	..	
Beef, dried.....	4 thin slices 4"x5"	2.0	100	67	33	..	.009	.180	.00250	8.3	...	..	3	+	+	++	..	
Beef, round, lean.....	3 slices, 2½"x2½"x¼"	3.5	156	85	71	..	.012	.202	.00300	10.3	...	50	4	75	125	..	..	
Beef, roast, rib, lean.....	1 slice, 5"x2½"x¼"	1.6	100	46	54	..	.002	.132	.00400	4.5	...	23	4	35	60	..	..	
Beef Steak, round.....	piece 2½"x2½"x¾"	3.5	156	85	71	..	.012	.202	.00300	10.3	...	50	4	75	125	..	..	
Beef Steak, sirloin, broiled.....	piece 5"x2½"x¾"	4.8	300	147	153	..	.007	.396	.01200	12.5	...	70	4	104	174	..	..	
Hamburg Steak.....	Cake 2½" diam., ¾" thick	2.0	100	55	45	..	.009	.132	.00190	5.1	...	29	3	43	72	..	..	
Ham Boiled (lean).....	1 slice, 5"x5"x¾"	1.7	100	43	57	..	.007	.114	.00120	5.5	...	++	3	+	++	..	..	
Lamb Chops, broiled.....	1 chop (lean meat)	1.6	100	40	60	..	.007	.110	.00150	4.8	...	+	4	—	+	—	..	
Lamb, roast leg.....	1 slice, 3½"x4½"x¾"	1.8	100	41	59	..	.007	.110	.00085	4.2	...	+	3	—	+	—	..	
Liver, Beef.....	small serving	2.7	100	63	32	5	.009	.286	.00635	7.9	...	59	3	7,560 (R)	780	35	35	
Liver, Calf.....	3½"x2½"x¾" (cooked)	100	62	38	..	..	.009	.286	.00432	7.6	...	+	3	5,694	702	8	8	
Meat Pie, pie crust with meat and veg. (Rose)...	1 fair-sized	400	40	172	188	..	.003	.013	.00080	..	1.2	+	4	+	+	+	..	
Meat Sandwiches.....	2 thin slices white bread, 1 slice roast beef	225	56	108	61	..	.012	.161	.00429	7.3	...	+	8	+	+	—	..	
Meat Stew with Vegetables.....	1 cup	245	81	56	108	..	.050	.232	.00350	..	3.0	+	3	+	+	+	..	
Pork Chop.....	1 chop, broiled	2.4	200	64	136	..	.009	.172	.00240	8.0	...	259	3	0	88	—	..	
Sausages (Pork).....	2 medium sized	1.1	165	20	143	2	.023	.189	.00265	1.9	...	+	3	—	—	—	..	
Veal, roast leg.....	1 slice, 4"x2½"x¾"	4.6	200	142	58	..	.023	.189	.00265	13.8	...	+	3	..	166	—	..	



Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Masti- cation	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base		A	B <sub>1</sub>	B <sub>2</sub>	C	D
<b>Group 8—Fish</b>																	
Cod, steak.....	1 serving, 3½"x2½"x1"	3.5	100	94	6	..	.014	.238	.00045	12.1	...	—	5	20(R)	+	—	..
Flounder, fresh (sole).....	1 serving, 4"x2½"x1"	5.7	100	92	8	..	.058	.264	.00115	5.7	...	—	..	+	+	—	..
Halibut Steak.....	1 serving, 3"x1½"x1"	3.0	100	61	39	..	.007	.167	.00080	7.8	...	—	+	+	+	—	..
Mackerel.....	Cross-section 2½" on back	2.5	100	54	46	..	.007	.198	.00065	6.7	...	—	+	+	+	—	..
Oysters.....	½ cup, or 6 small oysters	3.6	50	25	12	13	.055	.149	.00580	15.0	...	—	200	150	..	5(R)	5
Salmon, fresh.....	1 slice, 2"x3"x¾"	1.8	100	43	57	..	.005	.119	.00045	5.4	...	—	+	+	+	—	..
Salmon, canned, red.....	½ cup	2.7	100	59	41	..	.051	.216	.00100	8.3	...	—	230(R)	23(R)	60(R)	—	..
Sardines, canned.....	4—3" long	1.3	100	34	66	..	.014	.136	.00065	4.2	...	—	+	+	+	—	..
Shrimps, canned.....	20 shrimps (¾ cup)	3.2	100	91	8	1	.087	.154	.00125	...	...	—	+	+	+	—	..
Smelts.....	2—6" long	4.1	100	81	19	..	.023	.233	.00115	10.1	...	—	+	+	+	—	..
Trout, steamed.....	1 serving, 2"x2½"x¾"	3.0	100	74	26	..	.030	.224	.00085	8.1	...	—	+	+	+	—	..
White Fish.....	1 serving, 2"x3"x1"	3.5	150	92	58	..	.150	.263	.00042	11.4	...	—	+	+	+	—	..

N.B.—To estimate  
composition of meat  
or fish not included  
in tables.

Meat—Average serving (200 calories) contains 15 grams protein (60 calories) and...

Fish—Average serving (100 calories) contains 15 grams protein (60 calories) and...

Ca .009 grams  
P .162 "  
Fe .00225 "  
Ca .016 "  
P .172 "  
Fe .00083 "

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Masti- Factor	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base		A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 9—Fowl																	
Chicken, Roast.....	1 slice 4"x2½"x1"	1.7	100	51	49	..	.005	.109	.00150	4.6	...	—	3	+	+	—	..
Chicken, Canned.....	¼ cup	1.5	100	49	51	..	.005	.109	.00150	4.6	...	—	2	+	+	—	..
Dressing for Fowl.....	⅓ cup	200	18	96	86	..	.010	.034	.00030	2.7	...	—	1	..	..	..	..
Turkey, Light meat.....	1 slice 4"x2½"x1"	1.9	100	75	25	..	.012	.207	.00285	5.7	...	—	3	+	+	—	..
Turkey, Dark meat.....	1 slice 4"x2½"x1"	1.8	100	80	20	..	.012	.216	.00300	5.4	...	—	3	+	+	—	..

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion				End Product		Regu- lating Factor	Masti- cation	Vitamins			
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base	A			B <sub>1</sub>	B <sub>2</sub>	C	D
Group 10—Soup																		
Bouillon.....	1 serving (¼ recipe)	4.2	12	10	1	1	....	....	....	....	....	..	0	..	..	..	..	..
Cream of Celery Soup.....	1 serving	3.6	100	16	43	41	.152	.112	.00049	..	5.0	—	0	++	+	..	..	..
Cream of Potato Soup.....	1 serving	4.2	112	17	42	53	.125	.114	.00071	..	4.0	+	..	++	+	..	..	..
Green Pea Soup.....	1 serving	7.0	135	27	43	65	.145	.210	.00181	..	2.0	+	0	++	+	..	..	..
Cream of Tomato Soup.....	1 serving	3.6	113	20	44	49	.131	.123	.00067	..	1.7	+	0	++	+	..	..	..
Clear Tomato Soup.....	1 serving	5.5	87	7	43	37	.012	.036	.00050	..	...	+	0	++	+	..	..	..
Vegetable Soup.....	1 serving		100	5	54	41	.025	.035	.00074	..	5.0	+	2	+	+	..	..	..
Group 11—Salads																		
Banana Salad.....	1 small serving		172	16	96	60	.020	.072	.00074	..	3.9	+	2	200	76	31	13	..
¾ Banana																		
1 Leaf Lettuce																		
1 tsp. Nuts (walnuts)																		
1 tsp. dressing (boiled)																		
Chicken Salad.....	1 serving		198	27	167	4	.003	.059	.00087	..	0.3	+	3	—	+	+	—	..
2 tsp. Chicken																		
2 tsp. Celery																		
¾ tsp. Fr. dressing																		
¾ tsp. Mayonnaise																		
Cole Slaw.....	1 serving (¼ cup)	45		3	35	7	.020	.012	.00013	..	1.8	+	3	22	22	27	24	..
Lettuce Salad.....	½ head with 2 tbsp. Mayonnaise	210		5	195	10	.013	.030	.00040	..	3.8	+	3	62	18	13	4	..
Potato Salad.....	1 serving	185		10	122	53	.032	.063	.00100	..	8.1	+	2	80	36	24	10	..
¾ Potato																		
3 Lettuce Leaves																		
1½ tsp. Mayonnaise																		
Tomato and Cucumber	1 serving	190		11	149	30	.042	.067	.00103	..	18.0	+	2	1,760	59	27	49	..
6 slices Tomato																		
6 slices Cucumber																		
3 Lettuce Leaves																		
1½ tsp. Mayonnaise																		
Tomato Salad (with lettuce).....	1 Tomato with 1 tbsp. Boiled dressing	75		11	21	43	.039	.074	.00127	..	13.9	+	2	3,437	97	40	72	..
Waldorf Salad.....	1 large serving	258		11	189	58	.039	.055	.00074	..	6.5	+	3	87	68	19	4	..
6 Walnuts (half)																		
¾ med. Apple, ¼ c.																		
Celery, 1 Lettuce																		
Leaf, 1½ tsp. Mayon- naise																		
Boiled dressing.....	1 tbsp.	0.7	20	2	12	6	.002	.006	.00012	..	...	—	1	+	+	+	..	..
French dressing.....	1 tbsp.	0.4	90	..	90	..	....	....	....	..	...	+	1	..	..	..	..	..
Mayonnaise.....	1 tbsp.	0.5	100	1	97	2	.002	.004	.00005	..	...	+	1	..	..	..	..	..

Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Factor	Masti- fication	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base			A	B <sub>1</sub>	B <sub>2</sub>	C	D
Group 12—Sugars, Candies, Jams, Etc.																		
Candy, hard	1 oz.	1.0	116	..	..	116	..	..	..	..	..	—	4	..	..	..	..	..
Chocolate, milk, sweet	1 piece, 2¼"x1"x¾"	0.7	100	7	58	35	..	..	..	..	..	—	2	..	..	..	..	..
Chocolate, unsweetened	1 square	1.0	173	15	124	34	.025	.128	.00077	..	..	—	2	..	..	..	..	..
Chocolate Bar	average 5c size	1.4	200	14	116	70	..	..	..	..	..	—	2	..	..	..	..	..
Chocolate Fudge	1 piece 1½"x1"x¾"	0.9	100	2	20	78	..	..	..	..	..	—	2	..	..	..	..	..
Corn Syrup	1½ tbsp.	1.0	100	..	..	100	.002	..	.00040	..	..	—	0	..	..	..	..	..
Cranberry Sauce	¼ cup (scant)	1.5	100	..	1	99	..	..	.00009	..	..	—	1	..	..	..	..	..
Fruit Jellies	1½ tbsp.	1.1	100	..	..	100	..	..	..	..	0.5	—	0	..	..	..	..	..
Jams	1 tbsp.	1.0	100	..	..	100	..	..	..	..	..	—	1	..	..	..	..	..
Maple Syrup	1½ tbsp.	1.2	100	..	..	100	.037	.004	.00100	..	..	+	0	..	..	..	..	..
Molasses	1½ tbsp.	1.2	100	3	..	97	.090	.009	.00255	..	20.8	+	0	..	..	..	..	..
Orange Marmalade	1 tbsp.	1.0	100	1	..	99	..	..	..	..	0.1	—	1	..	..	..	..	..
Sugar, granulated	1 teaspoon	0.18	20	..	..	20	..	..	..	..	..	—	0	..	..	..	..	..
"	1 cup	7.4	840	..	..	840	..	..	..	..	..	—	0	..	..	..	..	..
"	1 tbsp.	0.3	33	..	..	33	.008	.001	.00023	..	..	—	0	..	..	..	..	..
Sugar, brown	1 cup	5.8	625	..	..	625	.145	.017	.00429	..	..	—	0	..	..	..	..	..
Group 13—Beverages																		
Cocoa { ¾ cup milk	1 cup	..	183	28	73	82	.219	.197	.00055	..	3.2	—	0	302	37	110	0	4
" { 2 tsp. sugar	..	..	..	..	..	..	..	..	..	..	..	—	0	..	..	..	..	..
" { ½ tsp. cocoa	..	..	..	..	..	..	..	..	..	..	..	—	0	..	..	..	..	..
Cocoa (powder)	1 tbsp.	0.3	40	7	21	12	.009	.057	.00020	..	..	—	0	..	..	..	..	..
Coffee or Tea	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..	..	..	..
Grape juice	2 tbsp.	0.9	25	..	..	25	.003	.002	.00012	..	1.0	+	0	..	..	..	..	..
Soft Drinks—Ginger Ale, etc.	small bottle	..	60	..	..	60	..	..	..	..	..	..	..	..	..	..	..	..
Beer	1 glass—250 cc.	..	130	..	..	130	..	..	..	..	..	..	..	..	..	..	..	..
Wine	1 glass—30 cc.	..	50	..	..	50	..	..	..	..	..	..	..	..	..	..	..	..



Food	Portion	Weight Oz.	Total Calor- ies	Calories			Grams in Portion			End Product		Regu- lating Factor	Masti- cation	Vitamins				
				Prot.	Fat	Carb.	Ca	P	Fe	Acid	Base			A	B <sub>2</sub>	B <sub>2</sub>	C	D
Group 14—Desserts																		
Pies																		
Apple.....	1/8 of average pie	468		18	189	261	.012	.049	.00066	...	0.4	—	3	68	23	17	—	..
Butterscotch.....	" "	441		28	198	215	.089	.123	.00097	3.0	...	—	2	473	22	55	—	12
Chocolate Cream.....	" "	612		39	185	388	.133	.197	.00129	3.0	...	—	2	318	28	73	—	4
Custard.....	" "	355		39	161	155	.164	.191	.00128	...	0.3	—	2	451	38	100	—	7
Lemon Meringue.....	" "	505		21	110	374	.021	.068	.00091	4.0	...	—	2	167	10	18	10	2
Raisin.....	" "	500		22	165	313	.029	.078	.00100	...	9.1	+	3	...	...	...	...	...
Rhubarb.....	" "	497		23	195	279	.038	.071	.00100	...	1.1	+	2	46	2	—	—	...
Plain Pastry.....	" "	315		17	187	111	.006	.039	.00037	3.6	...	—	2	0	12	0	0	...
Puddings, etc.																		
Apple Tapioca.....	1 serving	200		2	2	196	.014	.038	.00079	...	...	—	2	...	...	...	...	...
Brown Betty.....	" "	311		15	93	203	.025	.054	.00088	...	2.5	+	2	359	32	25	3	10
Bread Pudding.....	" "	139		24	29	86	.120	.118	.00061	...	0.4	—	2	+	+	+	—	...
Brown Sugar Sauce.....	1/2 cup	107		1	30	76	...	...	...	...	...	—	0	—	—	—	—	...
Caramel Pudding.....	1 serving	160		17	10	133	.125	.107	.00050	...	0.7	—	1	+	+	+	—	...
Carrot Pudding.....	1 serving	430		16	130	284	.050	.112	.00205	...	7.0	—	3	+	+	...	...	...
Custard (Baked).....	1 serving	172		30	68	74	.161	.172	.00109	0.6	...	—	1	451	37	100	—	7
Fruit Whip (Prune).....	1 serving	145		11	134	020	.036	.00098	...	...	...	—	1	...	...	...	...	...
Ice Cream.....	1/2 cup	219		10	137	72	.076	.066	.00020	...	...	—	1	640	4	22	2	...
Jelly.....	1 serving	61		7	...	54	...	...	...	...	...	—	1	—	—	—	—	...
Lemon Snow.....	1 serving	133		6	...	127	.004	.002	.00001	0.2	...	—	1	...	...	...	...	...
Chocolate Blanc																		
Mange.....	1 serving	300		24	99	177	.277	.294	.00080	...	6.7	—	2	+	+	+	—	...
Rice Pudding.....	1 serving	141		22	18	101	.101	.111	.00079	0.7	...	—	2	+	+	+	—	...
Tapioca Custard.....	1 serving	132		19	17	96	.102	.108	.00082	...	...	—	2	+	+	+	—	...
Group 15—																		
Miscellaneous																		
Almonds.....	12-15 nuts	0.6		13	76	11	.038	.068	.00060	...	1.8	...	3	+	17	...	—	...
Brazil nuts.....	2 nuts (shelled)	0.5		10	86	4	...	...	.00056	...	...	...	...	...	...	...	...	...
Catsup, tomato.....	1 tbsp.	0.7		2	2	21	...	...	...	...	...	...	4	...	45	+	...	...
Chestnuts.....	7 nuts (shelled)	1.5		10	20	70	.013	.038	.00030	...	6.0	—	3	...	...	...	...	...
Cocoanut.....	3 tbsp.	0.6		4	77	19	.010	.019	.00030	...	1.2	—	3	...	...	...	...	...
Gelatin.....	1 tbsp.	0.3		30	...	...	...	...	...	...	...	—	...	—	...	...	...	...
Marshmallows.....	5-1 1/2" diam.	1.0		7	...	93	...	...	...	...	...	...	2	...	...	...	...	...
Mushrooms.....	11, 1" in diameter	3.5		*	*	*	.016	.097	.00070	...	4.4	—	...	...	100	...	10	...
Peanuts, roasted.....	5 double nuts (1 tbsp.)	0.3		9	32	9	.006	.036	.00020	0.3	...	—	3	+	58	18	—	...
Peanut Butter.....	1 tbsp.	0.6		19	69	12	.012	.066	.00030	...	...	—	1	+	40	36	—	...
Pecans.....	12 halves	0.5		5	87	8	.012	.044	.00035	...	...	—	3	30	15	15	—	...
Sandwich Spread (mayonnaise).....	1 tbsp.	100		1	97	2	.002	.004	.00005	...	...	+	1	...	...	...	...	...
Walnuts.....	4-8 nuts or 1 1/4 tbsp.	0.5		11	80	9	.014	.053	.00030	1.1	...	—	3	+	43	...	—	...
White sauce for vege- tables, medium.....	1/2 cup	100		8	70	22	...	...	...	...	2.0	—	0	...	...	...	...	...

\*none available.

# An Accessory Aspirator for Root Canal Therapy

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## DIGEST

By attaching a mandibular needle and empty anesthetic carpule to the saliva ejector tubing (in place of the customary saliva ejector) an efficient aspirator is made available which simplifies root canal drainage.

Cotton-point drainage is an inefficient and time-consuming procedure, and often the amount of toxic material retrieved is insufficient to relieve an acutely painful alveolar abscess.

The construction of an accessory root canal aspirator is described and the advantages of its use are enumerated.

LET US SUPPOSE that a patient presents with an acute alveolar abscess of an upper lateral incisor. He is exhausted. His face is distorted with swelling; his eye is closed and bloodshot. He has not slept for twenty-four hours; he is in pain and sick enough to be in bed. Drainage is indicated. The offending tooth is easily located, but under the circumstances a local anesthetic injection is contra-indicated.

## Treatment

Access into the pulp chamber is obtained with sharp, new burs, while the tooth, which is usually loose, is supported to prevent undue pressure. On entering the chamber a drop of pus will usually appear at the opening. Pressure is relieved, but this is not sufficient. It is at this stage in the treatment that

tedious cotton-point drainage is ordinarily begun.

The accessory root canal aspirator is now utilized instead of the cotton points. It provides the following advantages:

1. Continuous and controllable suction, from light to strong, by adjusting the ejector thumb-nut on the unit.
2. Once properly inserted into the canal, the apparatus need not be handled or adjusted.
3. The apparatus may be discarded after use.
4. Visible drainage is observed in the glass tube; thus a positive means of noting the character and amount of suppurative material is provided.
5. If a culture is desired, the tube can be sealed and, without additional handling, sent to the pathologist. (In such cases the needle and tube should be sterile before use.)

Positive relief of pressure and pain is assured by this adequate aspiration of the abscessed area.

Let us consider another hypothetical case in which the patient has an upper incisor, the apex of which is involved in an alveolar cyst of long standing. The operator decides to enucleate the cyst and to perform a root amputation subsequent to root canal filling. The canal is opened; repeated cotton-point draining does not seem to dry the canal enough to begin the root canal filling. Constant seepage from the cyst frustrates all attempts at drying the canal. Here the accessory aspirator can be used effectively to drain the cyst through the canal itself; or, if palpable labially or palatally, the needle can be inserted directly into the cyst itself and aspirated in one sitting. The canal can then be dried, sterilized, and filled in

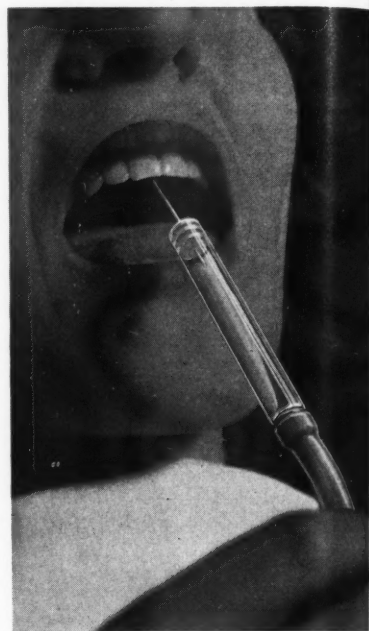


Fig. 1—Picture of aspirator in use on patient.

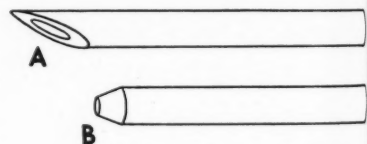


Fig. 2—A, Needle before modification of bevel; B, bevel modified.

preparation for the enucleation of the cyst and apicoectomy.

## Method of Construction

The accessory aspirator is constructed by assembling a carpule type 15/8 inch mandibular needle and an empty glass anesthetic carpule tube. The needle is forced through the rubber stopper and the open end of the tube (when in use) is attached to the saliva ejector tubing by interposing a short

(Continued on page 132)

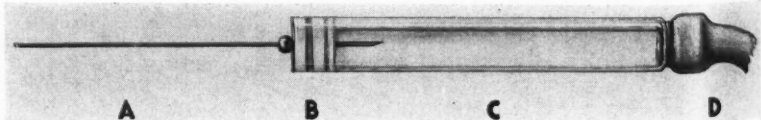


Fig. 3—A, 1 5/8 inch needle, 23 gauge; B, rubber plunger; C, glass carpule; D, rubber connecting tube.

## The Editor's Page

ONE OF THE MOST trenchant expressions to describe a common attitude toward the present war effort came in a speech given by a college professor. He called this attitude the "corrosion of complacency." This expression is almost too accurate in its description. "Corrosion" denotes the chemical force that is degenerative and slow-destroying. "Corrosive" is to be lethal by slow, insidious degrees. After Pearl Harbor we were fighting mad, with blood pounding in our chests and hearts. Then slowly the corrosive forces settled upon us. We want to keep all our creature comforts, without giving them up even for a time. Doubt in the competence of our leaders is expressed without regard for careful appraisal. The fires of gossip are spread and fanned.

Today the nation has suffered temporary defeats and military set-backs. We have been warned by people in authority that we may expect more disappointments. The loss of men and ships and planes is tragic; but the mounting treachery and danger are in the miasma of fear and doubt and defeatism that has come to lay poisonously upon the land, and the "corrosive complacency" that thinks we will somehow muddle through victoriously without straining every effort.

In these days when nations are destroyed with a few swift blows and culture and scientific progress must lag while peoples suffer and grow confused, it is necessary to hold fast in this country to the arts of peace and creative efforts even while gearing our energies in support of the war. It is sometimes difficult to do this, even to perform our simple daily tasks. But these are not times to cry and abandon ourselves to self-pity. We dentists can fortify morale. We can be careful of what we say—scrupulously careful not to pass along dark rumors and the mutterings of defeatists and malcontents. We can set the example of being grimly aware and helpful rather than indifferent or dour. We can find increasing satisfaction in doing our job as well as we can, earnestly trying to improve the physical well-being of the patients we serve—their fortitude will be increased by health.

In these times dentists should be drawn together—not cleft by schisms. These are times when dentists should be encouraged to continue their researches, to continue to make significant observations in clinical procedure, to perfect techniques. These benefits will be needed more and more and there will be a great

need for them when the war is won. We should not cease scientific writing and reading and making scientific contributions because a war is being fought. Everything we do to hold back progress is a challenge to morale and everything we do toward accomplishments is a spur to victory. When we look about us and see institutions and organizations not quite so good as they used to be, run down at the heel, the depressing reaction is endangering. We should try to keep things going just as well as we can—not at the expense of the war effort but by added effort. We must not take the war as an excuse to let good things die.

This magazine would like to do something to keep alive the scientific spirit within the profession. We would like to encourage dentists to continue with their studies and with their writing despite the demands of the war and its disturbing effects. To that end we are offering an award of a \$100 Defense Bond to be given twice each year to the author of the article that is considered by readers of this magazine to be of the most value to them. Articles will be accepted as usual for publication at the discretion of the editor; but the published articles will be judged only by the readers. We do not propose to have a selected group of judges nor do we propose to organize a high-sounding Academy or a College to give this award a specious distinction. We are merely wishing to give a little impetus to the democratic habits and will let the readers decide by free and uncontrolled expression what articles they consider the best and what authors should be given the Defense Bond Awards. It is a small gesture, nothing conspicuously magnanimous or important; but we believe that many such gestures and courtesies throughout the country among particular groups can be cumulatively beneficial to the country's morale.

We would like to think that a large number of readers of this magazine will enter wholeheartedly into this contest—readers who have themselves been authors in the past and readers who have never before tried to put their ideas together in written presentation. Only two authors each year will receive a tangible award, but the others whose articles are acceptable for publication will have made a contribution to the literature, and all who try will have done something to keep the scientific wheels of the profession turning during a period of stress and strain, and by that much will have bolstered morale.



# Electromedication in Root Canal Therapy

ALEXANDER M. RAPOPORT, D.D.S., Chicago

## DIGEST

Electromedication is the introduction of medicaments into an area of infection (the root canal) by the use of electromotive force.

Electromotive force insures prompt and certain placement of the sterilizing medicament in the area of infection.

Electromedication may be employed in old chronic cases in which the root canals have been filled, and in recent acute cases.

The technical procedure is outlined, and typical cases in which root canal therapy is indicated are illustrated.

ELECTROMEDICATION MAY be considered as the introduction of medicaments into an area of infection by the use of electromotive force. When a direct current is passed through a chemical solution, chemical decomposition takes place. The electropositive parts of the chemical solution travel with the positive electrons toward the negative electric pole; whereas the electronegative parts of the chemical solution will travel with the negative electrons toward the positive electric pole.

Because we know that certain chemical elements are electropositive and others are electronegative, it is a simple matter to provide for the desired movement of these elements. If, for instance, we wish to send zinc into an area of infection, the zinc is placed at the electropositive pole and the zinc will travel toward the electronegative pole, and

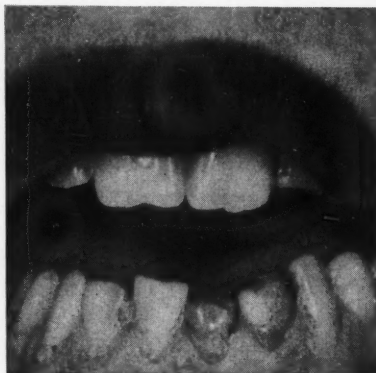


Fig. 1 (Case 1)—A girl, aged 16, presented with the lower left central and lateral involved. There were large areas of chronic abscess. The arch was not yet fully developed. Note condition of lower left central and lateral before restoration.

thus as it is carried into the body, it deposits itself in the tissue. The electrons provide the means of carrying the

Electromedication is a positive means of insuring the introduction of sterilizing medicaments into the surrounding area, so that once the sterilizing agent enters the area, it will act on the infection present exactly as it would act on infection in any exposed area of the body.

## Technique

1. Prepare the root canal mechanically and chemically. The tooth to be treated is as usual isolated by a rubber dam.
2. To the positive output cord of the electromedication unit, attach a clamp-electrode.
3. Place a pad of cotton which has been dampened in salt water in the palm of the patient's hand.
4. Slip the disk of the clamp elec-



Fig. 2 (Case 1)—Roentgenograms (from left to right) taken February 16, 1935; March 23, 1935; January 7, 1936; September 26, 1940.

chemical into the area of infection.

Electromedication need hardly be considered as anything different from the forcing of medicaments into the canal and through the apex without electromotive force, except that the electromotive force puts the medicament into the area at once and without question.

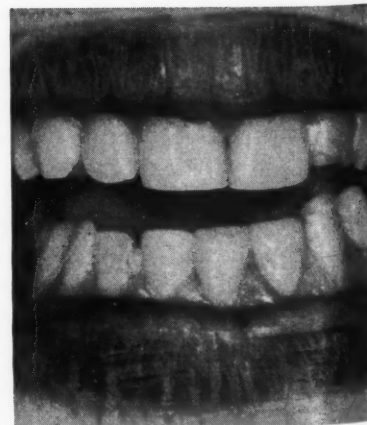


Fig. 3 (Case 1)—Appearance in September, 1940. Note porcelain jackets on gold core build-ups on lower left central and lateral.

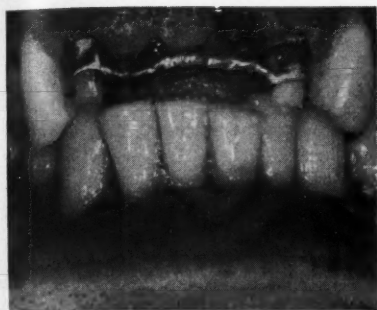


Fig. 4 (Case 2)—A man, aged 28, had an upper right lateral involvement. Upper right lateral root canal treated. Tooth used as one of the abutments for a fixed bridge (January, 1940).



Fig. 5 (Case 2)—Roentgenograms (from left to right) taken November 4, 1939; January 27, 1940; July 30, 1941.

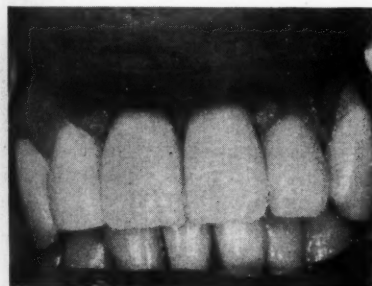


Fig. 6 (Case 2)—Fixed bridge in place after the root canal of the upper right lateral was filled (September, 1941).

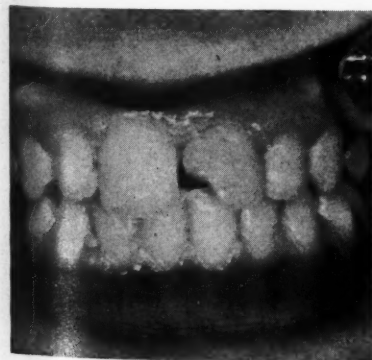


Fig. 7 (Case 3)—A girl, aged 15, had an involvement of the upper left central after an accidental fracture which devitalized the pulp and resulted in an abscess.

trode onto the cotton pad and slip the spring portion of the electrode around the back of the patient's hand. The wet cotton pad protects against irritation of sensitive skin and assures better contact. Inasmuch as it is held in place by tension, there is no current variation during the treatment as there is when an ordinary electrode is held in the hand of the patient.

5. A small amount of Lugol's solution is introduced into the canal. As a rule the Lugol's solution must be renewed two or three times during the treatment, because all the iodide will



Fig. 8 (Case 3)—Roentgenograms taken July 10, 1940 and August 27, 1941).

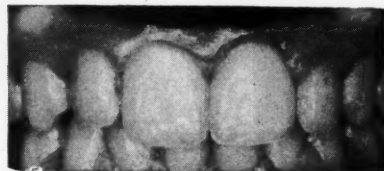


Fig. 9 (Case 3)—Porcelain jacket restoration on left central (September, 1941).

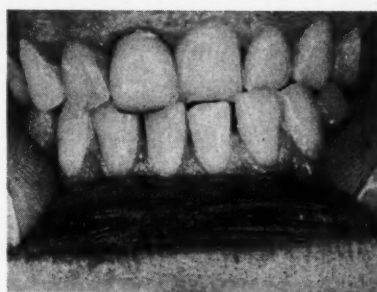


Fig. 10 (Case 4)—A woman, aged 27, presented with an upper right lateral involvement. The upper right central was extracted because of lateral penetration of the root. The upper right lateral was used for abutment after electromedication and root canal therapy. Note cross bite and malocclusion on left side. Taken before extraction of right central (September, 1939).

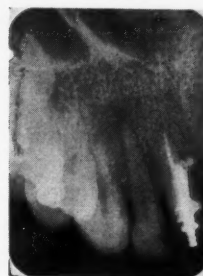


Fig. 11 (Case 4)—Roentgenograms taken September 9, 1939 (top) before extraction of right central; and January 16, 1941, after extraction of right central and treatment of right lateral.



Fig. 12 (Case 4)—Cross bite and malocclusion corrected. Porcelain bridge restoration in place. Right lateral used as an abutment, after treatment and filling of root canal (May, 1941).

be carried into the tissue and only a colorless liquid will remain in the canal.

6. A wire tooth electrode of proper gauge is connected to the electronegative output cord and the wire is introduced well into the canal. It is well to keep the wire tip about a millimeter from the apical opening. The tooth electrode should be held firmly in place, either by tying it with dental floss or wrapping cotton around the electrode before inserting in the canal. I prefer dental floss.

7. The electric current is turned on and the current slowly increased by turning the potentiometer control. As soon as the patient feels the current, stop and reduce the intensity of the current just enough to eliminate all sensation on the part of the patient. The current flowing through the patient is read on the equipment meter. If current is flowing at the rate of 1 milliamperes, give the patient 30 minutes of

treatment. If the rate is 1.5 milliamperes, the treatment is reduced to 20 minutes. If the patient is accepting 2 milliamperes of current, 15 minutes of treatment is given.

8. In many cases the root canal is filled immediately following the first treatment. In other cases two or three treatments may be given, and I have had some cases in which I have given as many as six treatments. In some of these cases I have made a culture before filling the canal. Actual experience provides the answer to the number of treatments required.

### Comments

I believe that many more dentists would engage in root canal therapy if they used electromedication to sterilize the periapical areas, and if they considered the procedure not only from the point of view of saving the one tooth

under treatment but from the point of view of the advantages offered the dentist in saving the tooth. Saving a tooth often simplifies the restorative procedure. This is especially true, for instance, in a young person in whom the full development of the arch is not complete. If an anterior tooth is lost in such a mouth, the problem of restoration is a major one. A final restoration can hardly be made because of incomplete development of the arch, and often satisfaction for the patient is impossible until such development has become complete. The mechanical and esthetic problem in such cases is simplified by root canal therapy and electromedication of the periapical area to save the tooth.

Electromedication may be employed in both acute and chronic cases: in old chronic cases in which the root canals have been filled, and in recent acute cases.

55 East Washington Street.

## AN ACCESSORY ASPIRATOR FOR ROOT CANAL THERAPY

(Continued from page 128)

section of rubber tubing of the proper gauge.

Before use, suction can be tested by inserting the needle into a cup of antiseptic solution. The solution should spout into the carpule with considerable activity if the lumen of the needle is unobstructed.

### Comments

Empty carpules and dull needles may

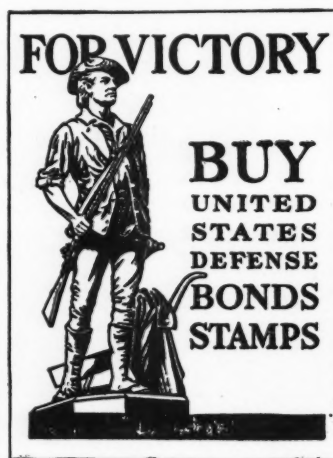
be saved for constructing the accessory aspirators for possible emergency use. Although it is simple to sterilize the apparatus, it is safer to use a new aspirator for each case.

The root end of the needles can be modified to achieve better suction by disk off the tapered bevel and creating a new even bevel around the lumen.

The aspirator also provides a safe method for removing the dry powdery

débris that accumulates in root canals after reaming and filing. It is certainly safer than using a chip blower with its attendant risks of contaminating the periapical area.

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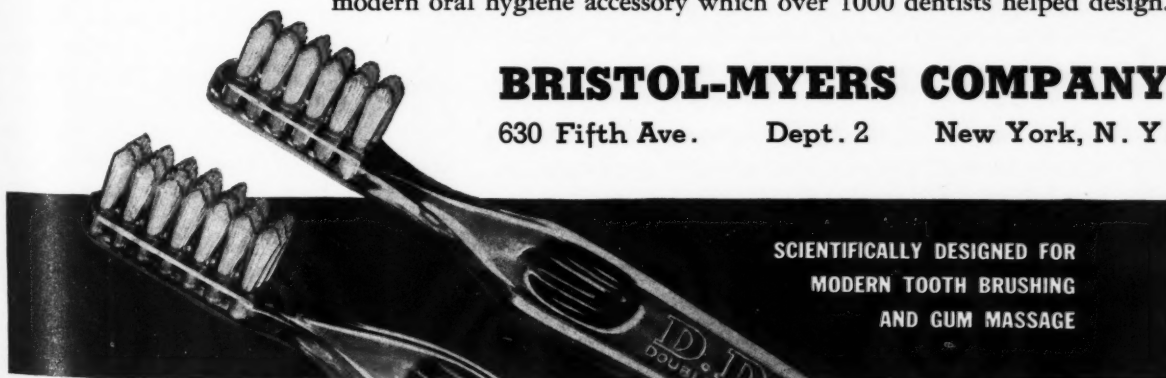
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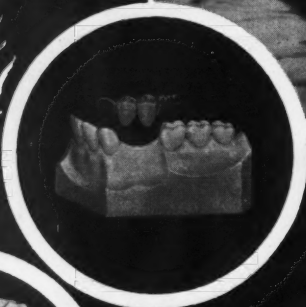
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## Contra- Angles



### "Strong for America" . . .

This is the slogan of 1942 of the Boy Scouts of America. It might well be the slogan for the country for all the years to come. This is the Thirty-Second Anniversary of this great organization which now comprises 1,500,000 boys, and 300,000 men who have taken the trouble and made the sacrifices and shared the fun in being the scout leaders. I recall the founding of the Boy Scouts thirty-two years ago. As a boy of 10 in a small community, the Boy Scouts were somehow at first associated with the effete and sissified. The Scouts have had a hard struggle along the line, and the very derisively-intended expression that some people use to describe a person who is trying to act in the right—"just a Boy Scout"—reflects the struggles of this noble organization.

Then we went through the disgraceful episode when our American boys—who were not Scouts—aped the outlaws and gangsters in American life. This was a particularly trying time for youth movements and the Boy Scouts received more than their share of abuses. Some of the pasty-faced puny people who made fun of the Scouts when they might have joined the organization are now soldiers by compulsion in our Army. They would have been better men and stronger men and better equipped to fight the hardened men of the totalitarian states if they had been Boy Scouts. The Colin Kellys are the boys who will save America, not the Dillingers. It will be the men who had their training as Boy Scouts, not members of the corner gang who will serve the nation best.

The man who knows as much about bad boys and bad men as anyone in the country, on the occasion of the Thirty-Second Anniversary of the founding of the Scout Movement, raised his strong,

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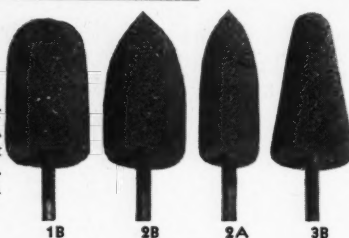
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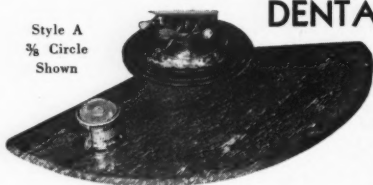
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clear voice in tribute to the Boy Scouts of America. This man is J. Edgar Hoover, Director of the Federal Bureau of Investigation. No one can call him or his alert agents effete. These few thousand men of the FBI are, in fact, known by all the enemies within our gates and without as the strongest single force in the defense of America.

Mr. Hoover, speaking to the Boy Scouts over a radio network said: "The vast majority of the men of the FBI had early training as Boy Scouts, of which they are proud. The lessons they learned then are aiding them now in making for a more secure America. In the North Woods, facing a raging snow storm, one former Scout was able to blaze a trail through almost impenetrable obstacles to a kidnaping hideout. In the South, not long ago, an FBI Agent with training received as a Scout, saved the life of a bleeding and battered citizen injured in an accident. Another former Scout was a key figure in breaking up a recent large spy ring. Daily, he risked his life associating with members of the Gestapo sent to spy on the United States. College-trained in law and foreign languages, but Scout-trained in radio and communications, his deeds will long live in the annals of FBI accomplishments. For months with fellow Agents he maintained daily radio contact with Nazi spy headquarters in Germany. And every moment there was the possibility of his identity being revealed and his life snuffed out by the bloody hands of agents of a nation that long ago strangled its Boy Scout movement. But that was no deterrent to him or the other Special Agents who have carried with them the lessons of their Scout days."

We dentists devote our researches and our energies to the prevention of a single disease, although the most widespread that affects man. In the future we are going to have to direct our attention as citizens to the prevention of wars, of poverty, of unemployment, and join in programs to prevent our boys and girls from becoming enemies of society. The Boy Scouts and the Girl Scouts and all the youth organizations will have an increasingly important place in the America of the future.

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ing lingual surfaces of molars. Thus, the bristles are brought in contact with interproximal surfaces and a better cleaning job is made possible.

Notice too, that the brush head is bent at an angle—just like your mouth mirror. It's no problem to reach and clean back molars or lingual surfaces of the incisors. With the Squibb Angle Toothbrush the exposed surfaces of *all* teeth can be reached whether the dental arch is wide or narrow; and with any brushing technique you recommend.

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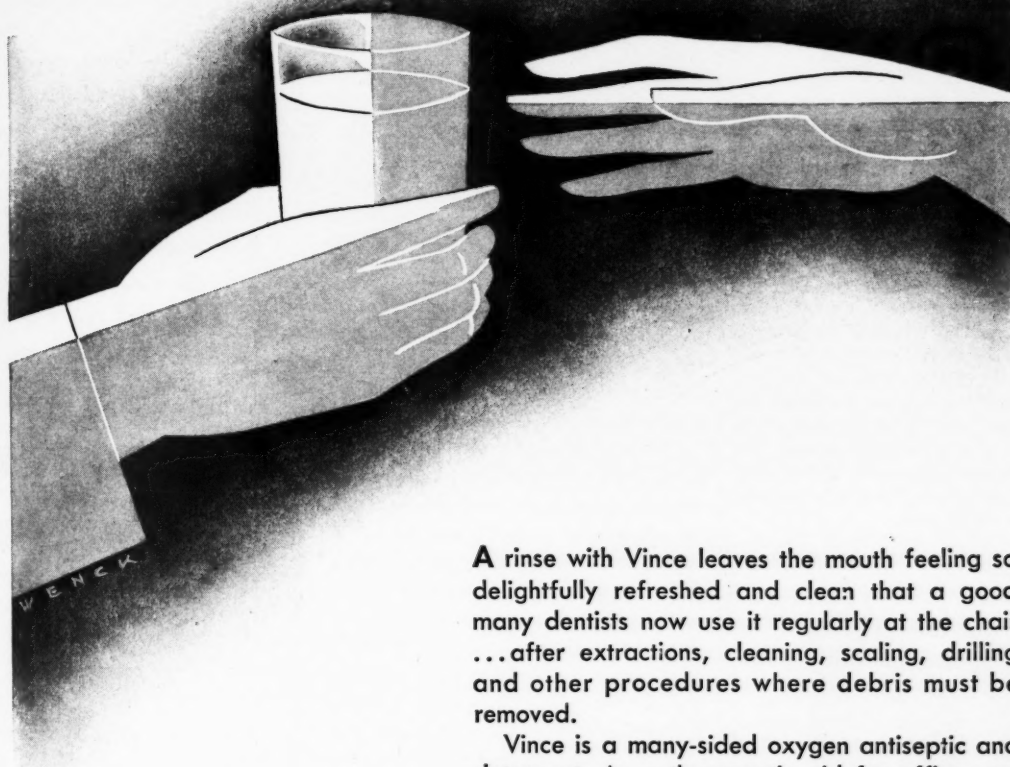
## The Newer Knowledge of Therapeutics . . .

Apparently we orthodox dental practitioners have been living in grievous error all these years that we have been considering alveolar abscesses as expressions of infectious processes. We have believed that these infections were certainly produced by bacteria and that the only therapeutic procedure was one of sound surgery. Although we do not intend to change this concept on the basis of the following pronouncement, dentists may be interested to know that one Eugene A. Bergholz, M.D. thinks we have been all wrong; that tooth abscesses are treatable "by a rapid fire eliminative blitz"—whatever that is; that any toothache can be cured by fasting, and that you can regenerate tooth structure by swallowing fresh fruits and living greens. The "authority" for this outstanding observation is a director of a Milwaukee sanatorium and reports these wonders in *Health News*. The following is his ungrammatical verbatim report:

"HISTORY—Patient developed an abscess from an infected filled tooth which had been previously devitalized. Swelling began over the upper left first premolar and extended upward involving the entire left face and eye which was swollen shut. Face was red and blue and considerably deformed. Temperature was elevated and the white blood count raised. Patient had been suffering pain night and day for the better part of a week. Unable to eat or sleep.

"ANALYSIS—Infection of teeth is not different from infection anywhere else. Bacteria are breaking up congesting corruptions a body is absorbing from decomposition products from bowels and uneliminated kidney wastes from overload on those organs. Unburned, unevacuated body debris clogs the fine interstices of the teeth. This plus simultaneous salivary changes allowing for bacterial life in the mouth, is a favorable basis to invite infection here. Dead teeth need not become abscessed if a body is cleansed sufficiently to avoid further pus formation. They should be retained rather than pulled. Once infected they can be saved by a rapid-fire eliminative blitz.

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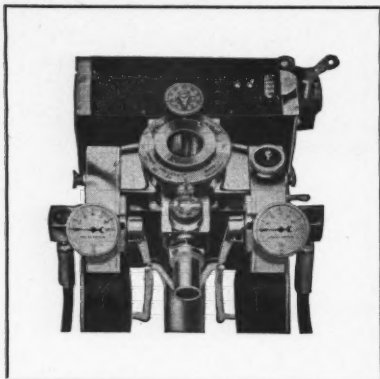
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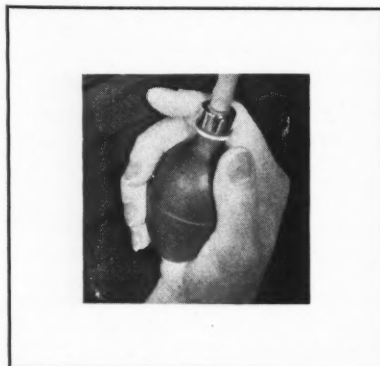
VINCE



## For COMPLETE PAIN CONTROL



For exodontia, surgery or for routine procedures in general practice the Nargraf provides an efficient, simplified and economical means of controlling pain. In anesthesia the technique is greatly simplified by the "single valve" dosage control which controls the volume of both nitrous oxid and oxygen; and the intermittent flow principle which coordinates the flow of gas with the patient's respiration.



For analgesia the Nargraf can be equipped with a patient-control bulb with which the patient controls the flow of gas, thus administering sufficient gas to promote analgesia and control pain in such operations as cavity preparation, prophylaxis, scaling and other routine instrumentation. For both anesthesia and analgesia the Nargraf reduces the technique to its simplest terms and provides economy in gas consumption available in no other gas dispensing apparatus.

Consider the economic and operative advantages of the Nargraf as your next equipment investment. Return the coupon on page 151 for the complete Nargraf book.

**McKesson Appliance Co.**  
Toledo, Ohio

**"TREATMENT**—Triple enemas (one, two, then four quart) daily. Full tub immersion, hot bath followed by vigorous cold showers. Alternating head packs daily, and especially hot fomentations to jaw every two hours. Absolute fast.

**"PROGRESS**—Patient had almost instant relief after the colon was cleared and the blood cleansed of excessive wastes through the skin thus relieving the internal pressure of lymphatic jamming. The second to third day the abscess quite suddenly came to a head between lip and tooth, burst open and drained profusely for 24 hours. Drainage repeated at intervals. Patient's face entirely back to normal in a week. A fruit and vegetable juice diet was followed for several days, then a mono fruit diet, a raw diet and finally one of raw and cooked with great moderation in proteins and especially starches and sweets. The question as to having the tooth pulled solved itself. Why pull a solid structure?

**"LESSON**—The great popularity of tooth-pulling practices the moment an ache, dead nerve, or infected root makes its appearance is to be deplored. Decaying tooth means degenerating, aging filth is gathering — inefficient intake and insufficient output—the one great cause of all disease processes. A toothache means not deficiency of calcium, but calcium-robbing practices of living and eating. Toxic wastes in a body can prevent calcium or any other chemical from being constructively incorporated into living tissues. This is especially so if you literally 'drown' the cells with concentrated doses. Remember a body molds and heals. It does this best on moderate amounts of vital foods, the ripe fresh fruits and living greens! A toothache is a warning to stop eating. To kill the pain or pull the tooth and eat anyway is a dangerous practice! Any toothache will stop on a fast. Later in crisis it may recur as a curative phenomenon. But if a vital program of living and eating be followed, teeth *can* be cured and regenerated. I have seen it done."

We would like to see a few cases of dental infection that Bergholz cured by filling the colon with soap suds or some other enema, and we would particularly like to see some scientific evidence of

## CANCER CAN BE CURED!

This is the welcome message your dollar will bring to thousands of cancer sufferers in 1942. Help us carry on the fight.

**Enlist in your local field army now.**

**Buy package labels today.**

*If you live in the Metropolitan Area, address the New York City Cancer Committee, 130 East 66th Street.*

## AMERICAN SOCIETY FOR THE CONTROL OF CANCER

New York, New York

## TO SAVE PAPER

Participating in the paper conservation program, beginning with the January issue, *THE DENTAL DIGEST* has adopted the standard size of *Time* and other popular national magazines.

In standardizing the size of the magazine, it has only been necessary to reduce the page-size by one-quarter inch on all four sides. The area occupied by type and illustrations remains unchanged. Only margins are affected.

As part of the same program *THE DENTAL DIGEST* is using address stickers rather than envelopes—adopting the practice pursued by many national magazines.



# CHAYES' = Precision = Better Dentistry



## CHAYES Precision Mounted Points

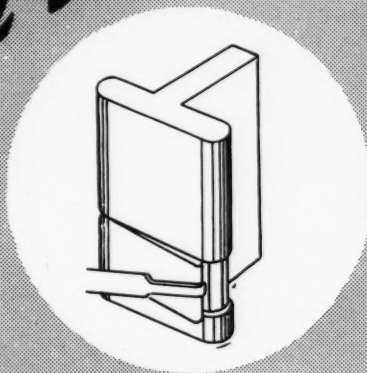
Now is the time to seal the doom of that B-r-r-r-r that patients have learned to dread.

Now is the time to change to fine, cool-cutting Chayes Precision Mounted Points.

They cut quickly and precisely. They're a tonic for frayed nerves—both yours and the patients'.

Every Chayes Mounted Point is made and examined with the same care that goes into a delicate watch. For thirty years, the name "Chayes" has been synonymous with precision.

Now — for your sake and your patients' sake — use Chayes Precision Mounted Points.



## CHAYES Moveable- Removable Bridgework

If you were making repairs on stone models, fixed bridgework would be quite satisfactory. You wouldn't have to worry about stress and strain; abutment teeth would never become loose, sensitive and painful. A stone model never complains!

But—you are practicing dentistry on *human beings* whose "teeth move in function." And so, *your* bridgework must be designed for mouths that live and breathe and change.

Let us explain how Chayes Moveable-Removable makes satisfied patients—*build practice*. Write for descriptive literature today.

**CHAYES DENTAL INSTRUMENT CORP.**  
"TEETH MOVE IN FUNCTION"

460 WEST 34<sup>th</sup> ST.  
NEW YORK CITY.

## In your ORAL HYGIENE this month



Colonel Finnie and his "palatial" quarters as chief of the Australian Dental Corps in the Near East, somewhere in Syria. The picture was taken only two months after his miraculous escape from Greece, but he has had replaced the eight upper teeth knocked out by a German parachutist on a beach in Greece.

## A DENTIST ESCAPES FROM GREECE

This month, in ORAL HYGIENE, the Chief of the Australian Dental Corps, Col. Hector Finnie, tells the dramatic story of the evacuation of Greece, his own escape to Crete, rescue by a British destroyer, and safe arrival in Egypt.

In the same issue, Doctor M. Don Clawson recounts the activities of "Australian Dentists at War." These brother dentists, our Allies, "have lost heavily in all but courage and ability," says Doctor Clawson.

There's a lighter touch in Dian Gardner's "Speaking of Dentists' Wives." Dental assistants will love it—and you will, too!

Last month, a detailed article provided "Income Tax Aid for Dentists." This month, "Take a Tax Look" discloses special information vital to every member of the profession.

"This is Your Business," the new department conducted by a trained economist, Peter T. Swanish, Ph.D., explains the implications in federalization, and its true meaning for every practicing dentist.

"Odds and Ends of the Moment" is a special feature commenting on up-to-the-minute news affecting dentists' lives and fortunes in a war-torn world.

In "After 50 Years," Doctor Ryland O. Sadler, after a half-century of practice, offers a ten-point plan of practice-management "in the hope of helping you."

ORAL HYGIENE's lively departments round out the March issue: Ask ORAL HYGIENE, Military and Defense News, Dentists in the News, Technique of the Month, Laffodontia, and The Publisher's Corner.

## In your March *Oral Hygiene*

"regenerated tooth structure" from any kind of nutritional program.

### Save the Tin . . .

The astounding fact has been revealed that 20 tons of toothpaste and shaving cream tubes are thrown away every day by the American people. This tin is highly valuable and useful in the war effort. The 60,000 retail drug stores in the country are offering to act as tin salvage stations. Inasmuch as the tin in toothpaste tubes is one of the chief sources of this salvage material, dentists can do a service by urging their patients to save used tubes.

### Paint for the Teeth . . .

We have been asked about a tooth cosmetic that is smeared over the enamel surfaces to cover streaks, stains, and other dental blemishes. Apparently the preparation is a proprietary and of an unknown composition—at least, I have seen no published formula. From the advertising it would appear that it is something like the liquid polish women use on the nails. Along with the coating preparation a bottle of remover, likewise of unannounced composition, is included. Without knowing anything about the chemistry of the preparation, we can point out that the use of any chemical in the mouth can be a dangerous procedure, and certainly anything that merely masks dental defects cannot be considered wise treatment.

As has been pointed out in another item in this column, you can't treat toothache and dental infection by enemas and fasting. And certainly you can't treat dental caries or calculus-covered teeth by any kind of a mask or deny its existence by any kind of a coating over the teeth. It is regrettable that people should be encouraged to spend good money for a concoction that masks disease when they won't spend money for either prophylactic treatment or proper dental care. We like to try to keep an open-minded attitude about all these things but we must look with great disfavor upon any dental concoction that is marketed without some assurance from dental authorities that the preparation is harmless. Mere harmlessness, moreover, is not enough.

(Continued on page 147)

# MYERSON CONTRIBUTIONS



1. TRUE-BLEND "The Miracle of Transparency"
2. TRUE-KUSP "Functional Posterior"
3. LIGHT-ABSORBENT FACINGS "New Light on Bridge Work"
4. CHARACTERIZED "Greater Naturalness Through Characterization"
5. TRIAL MOUNT "Scientific Presentation"
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AND NOW --

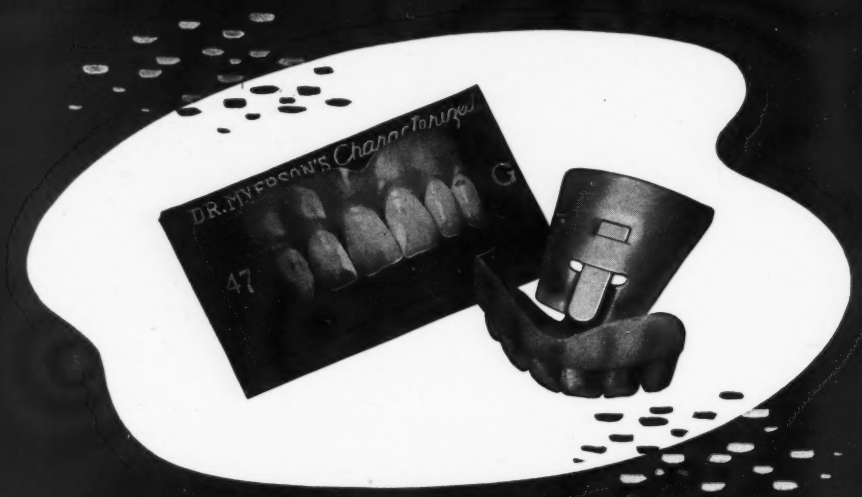
*4 Basic Typal Setups*

ALL THESE HAVE CONTRIBUTED TO--

- ✓ BETTER RESTORATIONS
- ✓ BETTER AESTHETICS
- ✓ BETTER FUNCTION
- ✓ BETTER HYGIENE



**IDEAL**  
**NEW**  
 Immediate  
 Teeth



...the world's most natural teeth, come to you from the factory ready to try in the mouth immediately, you are aided to ward still greater naturalness. . . you and your patient can see how the denture will look. . . The teeth are mounted in pink wax in a very life-like holder. . . Only Dr. Myerson's True-Blood and Characterized are carried in this beautiful manner.



And now to assist you achieve still greater naturalness Dr. Myerson presents the **FOUR BASIC TYPAL SET-UPS**.

**IDEAL TH**  
**CASE,**



## THE FOUR BASIC ARRANGEMENTS

# NATURALNESS

**M**OST of Dr. Myerson's contributions to Greater Naturalness in restorations are based on keen observation and understanding of Nature's effects. For example, he was the first to introduce transparent enamel in artificial teeth. Then he observed the importance of surface qualities, stains and irregularities and added these for still greater naturalness; then for the many cases requiring still further characterization, Dr. Myerson's Characterized anteriors were introduced.

However, even the most natural-looking teeth will lack the finest aesthetic effects if set up conventionally. Greatest beauty is always found where variations from the conventional arrangement exist. This fact has long been recognized.

Dr. Myerson has now developed a system of basic irregularities that add to the aesthetic value of a denture and greatly facilitate true-to-nature set-ups.

Its practical application is made possible by the unique Myerson System of carding and mounting and shipping teeth from the factory. This method permits immediate try-in and perfect visualization orally or extra-orally.

Using the four Moderate Typal Arrangements pictured here as basic, great variations in unlimited number of natural set-ups can be achieved easily *right on the card as you receive it.*

Save This Chart and Write for Further Details.

#1



#2



#3



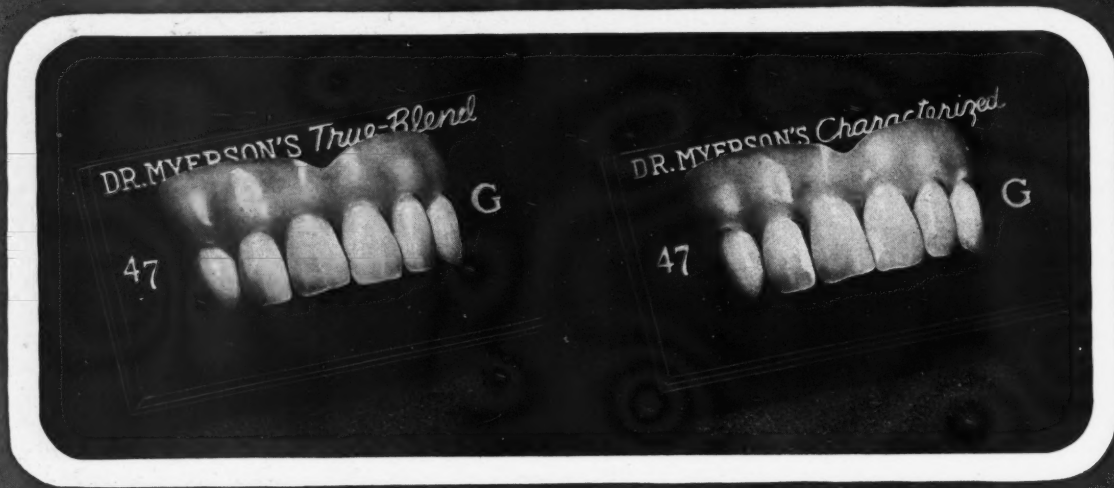
#4



THE INCORPORATED

CASE, MASSACHUSETTS

# Now...A MIXED SET OF CHARACTERIZED TRUE-BLEND ANTERIORS *at the cost of True-Blend*



A SET OF SIX TRUE-BLEND

3 TRUE-BLEND AND 3 CHARACTERIZED IN ONE SET

Without extra cost, you may avail yourself of one, two, or even three of Dr. Myerson's Characterized Teeth in a set of six anterior True-Blend. More than merely beautiful simulations of synthetic fillings, Characterized teeth have a remarkable surface texture unknown to other teeth, a marvelously varied tooth surface which deceives even the experts.

Two or more Characterized teeth in a set of Dr. Myerson's True-Blend will make denture detection impossible, even in partial cases. There is no problem of matching partial cases when one or more Characterized teeth are used. Ask your dealer about this new service.

IDEAL TOOTH INCORPORATED



CAMBRIDGE, MASSACHUSETTS



THE UNEQUALED RESEARCH AND PRODUCTION ABILITIES OF THE IDEAL TOOTH FACTORY HAVE MADE IT POSSIBLE TO GIVE US ALL THESE EXTRA QUALITIES TOWARD TOOTH PERFECTION AND VISUALIZATION WITHOUT EXTRA COST

*Myerson's Teeth for Greater Naturalness*

IDEAL TOOTH INCORPORATED

(Continued from page 142)

The product has no reason to be considered unless it is actually helpful, fills a need and fills it adequately.

An appropriate analogy has just come to hand in a book by Robert Foster Ash on "But Collections Are Awful." Mr. Ash tells how "In ancient days Roman sculptors sometimes sought to conceal surface cracks in a statue with the aid of melted beeswax. A buyer, deceived into believing that he was purchasing a flawless piece of marble, would proudly place such a statue in his atrium. A few weeks later the beeswax would dry out, crumble away, and leave the original cracks exposed. To such alarming proportions did this practice of wax trickery grow that it finally became the custom of reputable sculptors to guarantee their works as *sine cera*, without wax. Our present word 'sincere' we owe to a rebellion against wax." There should be a rebellion against misleading the public with insincere concoctions which may be harmful to health.

#### Procurement and Assignment . . .

If you want to grow dizzy, read the official release describing the organization of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. For example: The Procurement and Assignment Service is under the Office of the Defense, Health and Welfare Services which is in itself a part of the Office of Emergency Management which seems somehow to be under the Federal Security Administrator, Mr. McNutt. And the Procurement and Assignment Service in turn is hooked up with the Army, Navy, Public Health Service, Veterans Administration, Civil Service, Indian Service, Panama Canal Service, and Civilian Defense! If you can keep all that straight, you are better than I am.

The function of the Procurement and Assignment Service is three-fold:

1. "To receive from various governmental and other agencies requests for medical, dental and veterinarian personnel.
2. "To secure and maintain lists of professional personnel available, showing detailed qualifications of such personnel.

## An Appropriate Exposure Accessory for Every Film . . .



... from a  
 $1\frac{5}{16} \times 1\frac{1}{16}$  Bite-Wing  
to an  
8x10 extra-oral

**F**ilm dispenser, film receptacle, intra-oral cassette, intensifying screens, film holders . . . you recognize them all in the illustration above . . . these five aids to efficient exposure. But perhaps you don't realize that the Eastman line of materials for dental radiography is equally complete throughout . . . kept so to help you work more swiftly, more surely, and more effectively.

**Films:** Four types—Bite-Wing, Periapical, Occlusal, Extra-oral—in all of the sizes universally accepted by the profession, with the characteristics you favor. **Chemicals:** Both Concentrated Liquids and Prepared Powders, to meet your personal preference. **Accessories:** In Eastman's pages-long list, depend on it, there is every needed aid to efficient exposure, processing, and viewing.

For specific information, consult your regular dental salesman. . . . Eastman Kodak Company, *Medical Division*, Rochester, N. Y.

Eastman  
X-RAY  
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...THE COMPLETE LINE



# ATTENTION DENTAL WRITERS!



## A \$100 United States Defense Bond for you

To stimulate dental writers during the War, THE DENTAL DIGEST is offering United States Defense Bonds to authors. Twice each year, in January and July, the best article published in the preceding six issues will be selected by vote of the readers of this magazine, and not by a board of editors or judges. The author of the article receiving the largest number of votes at the end of each six-month period will be awarded a \$100 United States Defense Bond.

Awards will be made on January 15th and July 15th and the names of the winners will be published. The first award will be made on July 15, 1942. A suitable plaque indicating that the award is made by popular vote of the author's dental colleagues will accompany each Defense Bond Award.

*This is not a contest in the usual sense, but an effort to encourage research, improvements in clinical practice, and advancements in the dental literature during a period of war when scientific and technical progress in dentistry might falter.*

Illustrated articles of a practical, clinical nature, of the type usually seen in this magazine, are most likely to receive publication.

This invitation is open to all ethical dentists; it is effective immediately; it will remain open until further published notice.

You are invited to submit your manuscript to the Editor.

### THE DENTAL DIGEST

708 Church Street, Evanston, Illinois



3. "To utilize all suitable means to stimulate voluntary enrolment, having due regard for the over-all public health needs of the nation, including those of governmental agencies and civilian institutions."

The Procurement and Assignment Service is indeed a miniature and voluntary selective service agency to which governmental agencies come when they need medical personnel and to which medical personnel go when they wish to serve in some governmental capacity. It is in its essence a clearing house and it represents the urgency and the need for certain types of professional people, notably physicians, dentists and veterinarians.

All physicians, dentists and veterinarians in the country will be asked to fill out a questionnaire sent out by the Procurement and Assignment Service. You are urged regardless of age, sex, physical condition or employment to fill out the enrolment form and the questionnaire and to return it immediately. Please remember that this is a request made by the federal government and not by any dental organization.

#### Just Tell 'Em What Happened . . .

We journalists are frequent sufferers from sterility of thought. If you read the outpourings of any columnist long enough, you will know that is true. Take any columnist of your choosing: On some occasions he reaches the heights of clarity, vigor and effectiveness and on other occasions he is plain dull. What makes these swings from good to bad, and what causes us to stop in dead center in places in between? Physical condition has something to do with it; the weather, probably, is a factor. The columnist is currently either eupeptic or dyspeptic, and that is a factor—and frequently he merely has nothing to say. Sometimes, though, back in the crannies of the mind, an idea is lurking which we would like to develop, but we are not satisfied with just telling the story and telling it direct. We want to dress it up with poetic writing, flamboyant phrases and fanciful expressions, but that, curiously enough, is

(Continued on page 152)

## WHAT MAKES SUSIE RUN?



NOT AN AIR RAID WARNING . . . nor a scare head in the papers. Susie is just a "bundle of nerves," and is hurrying home from a dental appointment—maybe never to return.

Thousands of patients like Susie, would go to their dentist more often without the slightest fear, unhampered by "dental dread," if more dentists would make everyday dentistry a more pleasant experience by using a good anesthetic—Minimax Procaine Solutions. Psychology-wise practitioners rely on Minimax solutions for their patients' mental and physical comfort because they *know* from experience that Minimax solutions are dependable, have a uniform quality and proven efficacy.

Minimax Anesthetic Solutions come to you full of "vim, vigor and vitality" in the patented scientific Hy-Vac container that's dust proof, damp proof, wholly oxygen free. You can count on Minimax Solutions to alleviate pain, minimize apprehension, make operative work more pleasant for your patients and yourself. Buy Minimax, be satisfied.



Prepared in 3 strengths: Epinephrin 1:30000, 1:50000 and 1:70000. Supplied in two size cartridges: large for standard syringes, small for short syringes. 25 cts. in each Hy-Vac package.

Hy-Vac package patented U. S. Patent Number 2,215,479.

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## READER'S DIGEST . . . the informative magazine

\$3 for a one-year subscription, \$5 for a two-year subscription. Place your order through Doctor Russell Charles Panzica, 717 7th Street, Buffalo, N. Y.

See second cover

D.D.3

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48TH & BROWN STS., PHILADELPHIA, PA.

Please send copy of booklet mentioned in ad.

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Address .....

City .....

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D.D.3

KONFORMAX LABORATORIES, INC.  
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Please send descriptive literature.

Dr. ....

Address .....

City.. ..

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D.D.3

BRISTOL-MYERS CO.  
195 WEST 50TH ST., NEW YORK CITY

Please send Ipana literature.

Dr. ....

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COLUMBUS DENTAL MFG. CO.  
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Please send Apco Porcelain technic.

Dr. ....

Address .....

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ANTIDOLOR MFG. CO., INC.  
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Please send information concerning Novocain-Pontocaine-Cobefrin.

Dr. ....

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150

## DON'T HOARD RUBBER POLISHERS

Based on the unusually heavy orders pouring in for rubber polishers, many Dentists must be under the impression that there's going to be a shortage.

In cooperation with the national defense program we did not lay in an excessive inventory. While there will be a temporary delay in filling orders, we feel sure the Government will provide sufficient rubber to meet the needs of the profession.

While we appreciate the fact that the Dentists have made B S Polishers the largest selling rubber polisher in the world, we urge you not to order in excess of your immediate needs. Remember the boys fighting to preserve our way of life must also be cared for. So let us all work together for Victory.

**YOUNG DENTAL MFG.CO.** 4958 Suburban R.W. ST. LOUIS MO.

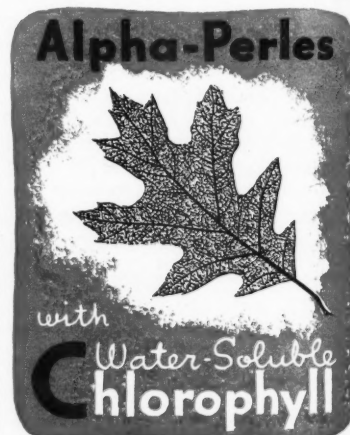
## A Low Priced Cement of Scientific Quality



Especially developed by Ames to provide a cement of real character that fully meets A.D.A. Specifications, Z-M Crown and Bridge Cement is finding ready acceptance and increasing popularity in the profession.

Those who desire the properties stressed in A.D.A. Specifications find them in Z-M Cement in such form as to render the maximum of clinical value. The low price of \$1.00 per portion of liquid or powder, 6 portions for \$5.00, provides an acceptable economy in the use of a truly scientific product.

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W. V-B. Ames  
Company,  
Fremont, Ohio  
**AMES**  
**DENTAL CEMENTS**



ALPHA PERLES, containing Chlorophyllin compound—one of the most discussed subjects of the day, is highly recommended as a supplementary diet. Clinical reports from hundreds of cases in which dentists prescribed Alpha Perles, show marked improvements in a high percentage in general health, arrested caries, sensitivity of teeth and condition of gums. Simple to take, readily assimilable in this water soluble form, Alpha Perles are indicated in cases of excessive and recurrent decay, decalcification, gingivitis, general debility, pregnancy, hypersensitivity and nutritional deficiency. Available in cartons of 60 and 180 perles. Write for complete information.



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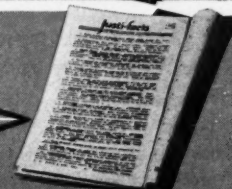
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SEE JUSTI advertising in: ORAL HYGIENE (February issue)  
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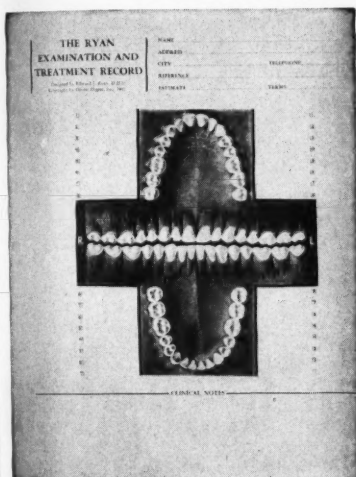


for useful technical information and  
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SEE JUSTI'S new technic sheet in DENTAL SURVEY (February & March issues)  
 and in DENTAL LABORATORY REVIEW (February & March issues)



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### For Permanent Records use the RYAN chart

Although the *Ryan Examination and Treatment Record Chart* was designed for the dentist's own convenience in his practice, the charts have been found to have a definite informative value in explaining conditions to patients. The charts are also particularly helpful in reporting dental conditions of patients to cooperating physicians.

The *Ryan Examination and Treatment Record Chart* is helping thousands of dentists. Many have said that this chart is the most practical one ever offered. The miniature illustration above is actual except for size.

Price per pad of 50 charts—\$1.00. Size 8 1/2 x 11, fitting any standard loose leaf binder.

**THE DENTAL DIGEST,**  
 1005 Liberty Avenue,  
 Pittsburgh, Pa.

Here is \$1.00. Please send me a pad of 50 Ryan Examination and Treatment Record Charts.

Dr. ....  
 Address .....  
 City .....

See page 135

D.D.3

**WERNET DENTAL MFG. CO., DEPT. L7**  
 190 BALDWIN AVE., JERSEY CITY, N. J.

Please send free supply of Wernet's Powder.

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 Address .....  
 City .....

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D.D.3

**HYGIENIC DENTAL RUBBER CO.**  
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Dr. ....  
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**WILMOT CASTLE CO.**  
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Please send information on the Castle 50 Sterilizer.

Dr. ....  
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**MCKESSON APPLIANCE CO.**  
 TOLEDO, OHIO

Please send information concerning the Nargraf.

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 460 WEST 34TH ST., NEW YORK CITY

Please send descriptive literature.

Dr. ....  
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 City .....

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D.D.3

**IDEAL TOOTH, INC.**  
 CAMBRIDGE, MASS.

Please send literature concerning TruBlend Teeth.

Dr. ....  
 Address .....  
 City .....

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**HARRY J. BOSWORTH CO.**  
 1315 S. MICHIGAN AVE., CHICAGO, ILL.

Please send Alpha Perles information.

Dr. ....  
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 City .....

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**COREGA CHEMICAL CO.**  
 208 ST. CLAIR AVE., N.W., CLEVELAND, OHIO

Please send Corega samples.

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 City .....

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D.D.3

**THE DENTAL DIGEST**  
 1005 LIBERTY AVE., PITTSBURGH, PA.

Here is \$..... covering a binder for the ..... volume of The Dental Digest.

Dr. ....  
 Address .....  
 City .....



(Continued from page 149)  
never effective writing. It may sometimes be colorful, but not effective. The only function of journalism is to convey ideas—either factual or interpretive.

The story is told of a cub reporter who returned to the city room after having witnessed an exciting event and stuck some paper in the typewriter, thumped out a few tentative leads, tore the paper from the machine, and started again. He made these starts and stops several times. Finally an oldtimer, sitting near the cub, gave him this piece of profound advice: "Just tell 'em what happened."—E. J. R.

#### DENTAL MEETING

### Dates

Cincinnati Dental Society, annual all-day clinic meeting, Netherland Plaza Hotel, March 18.

The Thomas P. Hinman Midwinter Clinic, Biltmore Hotel, Atlanta, March 23-24.

American Society for the Advancement of General Anesthesia in Dentistry, Spring Meeting, Midston House, New York City, March 23.

Old Dominion Dental Society, twenty-ninth annual meeting, Danville, Virginia, April 6-7.

Toledo Dental Centennial and Clinic Day, Secor Hotel, Toledo, Ohio, April 29.

Cleveland Dental Society, annual Spring Clinic, Statler Hotel, Cleveland, May 4-6.

New Jersey State Society, annual

meeting, Ambassador Hotel, Atlantic City, May 6-8.

Tennessee State Dental Association, seventy-fifth annual meeting, Hotel Patten, Chattanooga, May 11-14.

Indiana State Dental Association, eighty-fifth annual meeting, Claypool Hotel, Indianapolis, May 18-20.

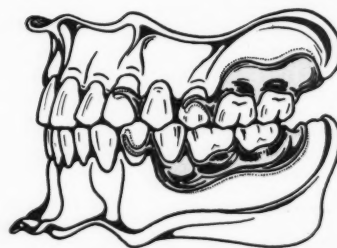
Ontario Dental Association, seventy-

fifth annual meeting, Royal York Hotel, Toronto, May 18-21.

California State Board of Dental Examiners, regular meeting, Physicians and Surgeons College of Dentistry, San Francisco, commencing May 25; at Los Angeles, University of Southern California, commencing June 15. For information write to Doctor K. I. Nesbitt, 515 Van Ness Avenue, San Francisco.

Utah State Dental Association, fifty-

## Gold structure best absorption





second annual meeting, Newhouse Hotel, Salt Lake City, June 4-6.

New Mexico State Board of Dental Examiners, regular meeting, Santa Fe, June 15-18. For information write to Doctor J. J. Clarke, Artesia.

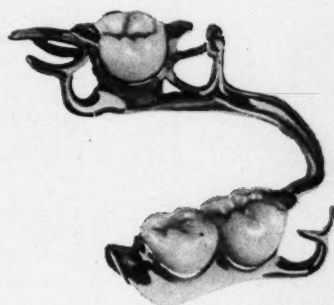
Maine State Board of Dental Examiners, regular meeting, State House, Augusta, June 22-24. For information write to Doctor C. W. Maxfield, 31 Central Street, Bangor.

New Jersey State Board of Dental Examiners, regular meeting, commencing June 29 and continuing for five days thereafter. For information write to Doctor W. A. Wilson, 150 East State Street, Trenton.

North Dakota State Board of Dental Examiners, regular meeting, Gardner Hotel, Fargo, July 13-16. For information write to Doctor L. I. Gilbert, 401 Black Building, Fargo.

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